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SOVIET COMMENTARY ON NEW U.S. COMBAT AIRCRAFT

Moscow KRYL'YA RODINY in Russian No 5, May 77 signed to press 11 April 77
p 42

[Article by Engineer Ye. Aleksandrov, from materials in the foreign press:
"According to the Aggressive Plans of the Pentagon"]

[Text] Despite some relaxation in international tension in the world, especially after the All-European Final Conference of the Heads of States with the participation of the United States and Canada, the military budgets of a number of capitalist states are continuously increasing. This pertains especially to the record appropriations for the needs of the Pentagon. The President of the United States has signed a bill which grants the Pentagon a record budget for the current fiscal year. And this is not the limit. The Pentagon intends to obtain an astronomical sum at the beginning of the 1980's--150 billion dollars.

All this is evidence that the military-industrial complex of the United States intends to increase and improve its armament, primarily the latest armament, on an even greater scale. Here, tremendous sums are being allocated for the needs of the Air Force. Thus, new billions of dollars are going for the development and creation of the B-1 supersonic strategic bomber. Furthermore, the F-14 and F-15 expensive fighters are going into the inventory (one F-15 costs 15 million dollars) as is the F-16 fighter.

The foreign press notes that a substantial technical leap in the field of aerodynamics, electronic equipment, and power units of the new generation of American fighters confirms the data that American industry has recovered from the technical depression.

The F-14A "Tomcat" Carrier-Based Fighter

The first flight of the F-14 test aircraft (production by the Grumman Corporation) took place in December 1970. It entered the inventory in 1973. The multipurpose fighter has a variable-sweep wing. It is intended to replace the F-4 "Phantom" and is intended for its employment as an air defense

fighter for the fleet as well as to launch strikes against coastal objectives. The crew consists of two men. Maximum speed: at an altitude of 12,190 meters--2,517 kilometers per hour, at the ground--1,470 kilometers per hour, and its service ceiling is about 21,000 meters; the payload is 3,200 kilograms. Armament: one cannon--20-mm M-61 A1 "Vulcan," four "Sparrow" and four "Sidewinder" guided missiles or six "Phoenix" and two "Sidewinder" missiles. Takeoff weight: of an empty aircraft--16,330 kg, normal in the accomplishment of a flight to intercept 25,990 kg; fuel supply in internal tanks--7,500 kg; wing span--19.54 meters; aircraft length--10.12 meters; height--4.88 meters. The craft has two turbojet engines--T 30-P-412 with a thrust of 9,344 kg each with afterburner.

The F-14A fighter was shown in 1975 at the Paris International Aerospace Exhibition. Production of the aircraft, it was reported there, will continue until 1981. All together, 450 aircraft have been ordered, of them 370 for U. S. Navy and 80 for the Iran. The fleet has already received 140 aircraft. Eight squadrons have been formed from them. The Grumman Corporation assumes that the F-14A will accomplish air defense missions until 1990.

The F-15 "Eagle" All-Weather Fighter

The airplane is being produced by the MacDonald-Douglas Corporation. The first flight of the test model took place in August 1972. Series production and delivery began a little over two years later.

Basic data of the aircraft are: Crew one man; speed of flight--maximum at an altitude of 12,190 meters--2,655 kilometers per hour, maximum at an altitude of about 300 meters--1,470 kilometers per hour; range (ferrying)--about 4,800 kilometers; service ceiling--up to 21,000 meters; landing distance--less than 1,200 meters; takeoff distance less than 600 meters. Armament: one gun--20mm M-61A, four "Sparrow" or "Sidewinder" guided missiles. Takeoff weight: empty aircraft--9,000 kilograms; normally equipped--18,144 kilograms; maximum--25,400 kilograms. Wing span--13.6 meters; length--19.46 meters; height--5.67 meters. The power unit consists of two F-100-PW-101 turbojet engines with a thrust of 10,890 kg each with afterburner.

Although the U. S. Air Force intends to buy 729 F-15 aircraft, the MacDonald-Douglas Corporation believes that all together approximately 1,800 airplanes will be sold. Of them, 1,100 are for the U.S. Air Force and 700 are for other countries. The most probable purchasers are considered to be Israel, Canada, the FRG, Britain and Iran.

F-16 Light Fighter

Recently, the foreign press has published much material on the re-equipping of the tactical aviation of the NATO countries. Analyzing the experience and results of the combat employment of tactical aviation in Southeast Asia and in the Near East, the military circles believe that now light supersonic "inexpensive" fighters are necessary. They should have minimum electronic equipment and a comparatively simplified sighting and navigation system.

Their mission is support of troops on the battlefield and to engage the aerial enemy.

The aircraft firms of the capitalist countries are conducting a "war" with each other to obtain the "order of the century" (as it is called in the West) for the building of the new aircraft which should replace by 1980, in particular, the F-104 "Starfighter" fighter-bomber which has become obsolete.

It should be noted that the "Starfighter" won the "fame" as an aircraft of high accident rate immediately after it was accepted into the inventory. Thus, according to the reports of the American journal TIME, hundreds of "Starfighters" were smashed: in West Germany--178, Canada--70, Belgium--32. In the United States itself losses in this aircraft were more than one-quarter of their total number.

A fierce struggle between the capitalist aircraft-building firms to obtain the "order of the century" has been conducted for a long time and, especially, between France and the United States. The light tactical fighter, the F-16 of the American General Dynamics Corporation won the victory.

The F-16 aircraft is a cantilever monoplane with a mid-mounted delta wing and a 3-legged landing gear. The cockpit permits large g-loads and provides a good field of view. The joining of the wing with the fuselage, which is distinguished by a smooth joint, is used in the aerodynamic configuration to increase the lift and decrease the drag at transonic speed. The intrawing areas permit an additional increase in the fuel supply.

Instead of the normal mechanical control system, an electrical remote system is employed over whose electrical circuits the pilot's commands are transmitted to the controls. The wing of variable curvature is supplied with leading-edge subassemblies and flaps. They are deflected automatically depending on the angle of attack and speed. This ensures the maximum lift coefficients and decreases the possibility of the appearance of buffeting for each of the flight modes.

One F-100PW turbojet engine with a thrust of 11,340 kg is installed in the aircraft.

The basic data of the F-16 are the following: maximum speed--2,300 kilometers per hour; service ceiling--more than 15,200 meters; maximum takeoff weight--15,970 kg. Armament: one 20-mm "Vulcan" cannon, two "Sidewinder" guided missiles. Length of aircraft--14.62 meters; wingspan--9.45 meters; height--5.01 meters.

The estimated cost of the F-16 for Western Europe in accordance with the 1975 rate of exchange is 5.16 million dollars.

Series production of the F-16 envisages the production of 1,500 airplanes including 102 for Belgium, 84 for Holland, 72 for Norway, and 48 for Denmark;

for the United States Air Force--650 aircraft, and approximately 500 for other countries. The first aircraft will begin to be delivered at the beginning of 1979. The Air Force and Department of Defense estimate that the total market for the F-16 fighters will be 850-2,000 airplanes. According to other sources the possible production is 4,800 aircraft.

The plan for modernizing tactical aviation provides for the arming of the U. S. Air Force with 26 fighter wings (72 aircraft in each wing). The use of expensive and "cheap" aircraft is planned. The F-16 armed with missiles with an infrared homing head and a 20-mm caliber cannon may prove to be sufficiently effective in close combat, supplementing the all-weather F-16 fighter which has a greater maximum speed, greater acceleration characteristics at supersonic speed, a vast radar operating radius, and better maneuverability at high supersonic speeds.

For its part, the F-16 fighter has better turning characteristics at subsonic and transonic speeds. At the same time, the smaller dimensions of the F-16 are also tactical advantages which decrease the probability of the aircraft's detection by radar.

B-1 Bomber

The B-1 heavy strategic bomber continues in its state of completion (produced by the North American Rockwell Corporation). It is intended to replace the B-52 bomber.

The basic characteristics of the B-1 with a variable wing sweep are the following: crew--four men; flight speed--maximum at an altitude of 15,000 meters--2,330 kilometers per hour and at an altitude of 300 meters--1,200 kilometers per hour; range with payload of 25-35 tons--11,000 kilometers; with nuclear armament and one aerial refuelling--16,000 kilometers; service ceiling--15,240 meters. Armament 24 "SRAM" guided missiles. Maximum takeoff weight--160,000-180,000 kilograms; wingspan--41.75 meters; length--43.85 meters; height--10.25 meters.

Four turbojet engines of the General Electric Corporation with a thrust of 13,600 kilograms each have been installed in the aircraft.

According to latest reports in the foreign press, it is planned to employ irregular air intakes in the B-1 bomber. The cost of one B-1 aircraft is 85.13 million dollars. However, it is assumed that the cost of the B-1 will increase possibly to 100 million dollars.

At the present time, the decision has been made to construct five B-1 aircraft at a cost of 1.1 billion dollars.

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DEVELOPMENT OF FIGHTER AVIATION TACTICS SINCE WORLD WAR II DISCUSSED

Moscow VOYENNO-ISTORICHESKIY ZHURNAL in Russian No 5, May 77 signed to press 18 Apr 77 pp 29-38

[Article by Maj Gen Avn L. Mikryukov and Colonel V. Babich, Candidate of Technical Sciences: "Development of Fighter Aviation Tactics Since World War II"¹; passages enclosed in slantlines printed in boldface]

[Text] The postwar period in the development of fighter aviation can be arbitrarily divided into four stages.

/The first stage (1945-1953)/ is characterized by the fact that jet fighters, which replaced piston-driven aircraft, appeared in the air forces of the militarily advanced countries. They were considerably superior to their predecessors in their performance data and combat capabilities. As early as May 1947 the MIG-9 and YaK-15 jet aircraft were shown in the May Day parade in Moscow. The MIG-15, which subsequently gained worldwide fame, began series production somewhat later.²

The jet fighters were quickly improved. Their speed continuously increased. Test pilot I. T. Ivashchenko succeeded in breaking the sound barrier in a MIG-17 aircraft.

The qualitative leap in the development of aircraft technology determined the necessity to improve the basic elements of tactics: methods of combat actions, tactical procedures, combat formations, and the organization of control and coordination in battle. The main distinguishing feature of the first stage was the greatest flourishing of the traditional tactics of the World War II period. The missions facing the fighters were accomplished with higher effectiveness.

The squadron was the basic tactical subunit. When accomplishing a combat mission it was divided into a strike group and a covering group and a reserve to build up the effort. The strike group included at least a flight and was intended to destroy the main formation of the aerial enemy. The duties of the covering group consisted of protecting the strike group and intensifying its attack power. The reserve (one-two elements) was to support the strike and

covering groups in combat and to repel the attacks of newly appearing enemy fighters. When the situation did not require the straining of all the squadron's efforts or no intensive enemy counteraction was expected, either no reserve was detailed or it was ready for takeoff at the airfield. In a surprise attack, the groups could change roles: the one which was in the most advantageous position was the first to go into battle.

The squadrons which were accomplishing difficult tactical missions had more dispersed combat formations than did the piston-driven fighters during the Great Patriotic War. This was caused by the necessity to give freedom of maneuver to each group with increased flying speeds and turning radius of the airplanes.

As formerly, a flight of fighters was divided into elements to conduct combat. Coordination was maintained between them. When a single flight combat formation was maintained, the element's wingman was also considered the covering aircraft and changed his position in the combat formation at various stages of the flight. Typical was an open formation frontally and a higher altitude in relation to the element leader. On closing with the aerial enemy, the flight combat formation was extended in depth for best protection against an attack by enemy fighters and the concentration of fire in the direction of attack.

It became more difficult to control a dispersed combat formation in the air. The squadron commander could no longer keep all the wingmen under constant visual control, especially in the course of energetic maneuvering. He required assistance from the ground, on the part of the command post whose combat section followed the aerial situation using radar.

It was considered that a duty of the CP [command post] was ensuring the fighters' tactically advantageous position before the battle and constantly informing them concerning enemy actions. Nevertheless, the basic method of control in battle remained leadership on the part of the commander who was located in the air. Not having the capability to observe each crew individually, he coordinated his subordinates' actions through the flight commanders who had different tactical assignments (cover, intensifying efforts, and so forth). However, the role of the ground command post in attaining success in battle constantly increased. The experience in controlling aviation from the ground which was accumulated in the war years found ever wider application.

The correctness of the ways selected to improve tactics was confirmed during the Korean War (1950-1953). The experience of employing jet fighters in a combat situation demonstrated the superior qualities of the MIG-15 aircraft. As evidenced by the Swedish journal INTERAVIA, the MIG-15 was superior to any American aircraft for speed, maneuverability, and firepower.³ Its better combat capabilities and the flight personnel's high morale ensured success in aerial battle.

The West German journal TRUPPENPRAXIS wrote: At altitudes greater than 3,000 meters, the MIG-15 North Korean fighter unquestionably had

superiority in rate of climb and turnability over the American F-86 'Sabre' aircraft, and this also determined the enemies' selection of methods for the conduct of battle."⁴

Exploiting the advantages of their equipment, the MIG-15 pilots preferred to conduct battle in verticals and strove to occupy a greater altitude than the enemy. The attack (or repelling it) was conducted from above; cannon fire was opened at a distance of 200-600 meters with a sudden power climb.

Exploiting the performance characteristics of their airplane, the American pilots could turn quickly in a horizontal plane at low and medium altitudes and therefore preferred to wage battle in banked turns. The procedures for battle between fighters of the same class but with different performance data were formed from these two tactical concepts. Logic forced the pilot to reject procedures imposed on him by the enemy and to adhere strictly to his own rules for seizure of the initiative. In connection with the fact that the firepower of a single airplane or element was relatively weak, the outcome of the engagement was considerably affected by numerical superiority over the enemy in the air.

The striving constantly to have an altitude advantage was caused by the relatively shallow depth of the squadron's combat formation. Usually, tactical groups were arranged one above the other. In battle which bore a maneuver character as during World War II, it was difficult to maintain a single combat formation. Therefore, the fighters of the Korean People's Army often preferred to fly on a mission in sixes where a third element which was called a "free maneuver group" was added to the two elements of the flight. In searching for the enemy, the flight of six aircraft formed up as a blunt wedge and, prior to the battle, the "free" element reformed into an echelon or gained altitude suddenly and was ready to intensify the efforts or repel an attack of enemy fighters.

Combat operations in Korea showed that one of the most important factors influencing the course and outcome of aerial battle continued to remain tactical surprise. As is known, in the years of the Great Patriotic War 75 percent of the total number of fascist aircraft shot down were destroyed in the first attack, 15 percent in the second, and only 10 percent in the third and subsequent attacks.⁵ Judging from information in the foreign press, this ratio was not changed in the Korean War. In this regard, western observers noted the dissimilarity in the tactical missions accomplished by the sides: the American fighters basically supported the combat operations of bombers and attack aircraft while the pilots of the DPRK [Democratic People's Republic of Korea] engaged them. The situation which developed forced some to wage defensive battle more often and others--offensive battle in which the means and methods for attaining victory are much greater. However, the defending side also had the possibility of inflicting serious losses on the enemy.

It was very difficult to achieve surprise when conducting battle at a considerable altitude; therefore, the North Korean fighters widely employed military cunning, concealment against a background of the sun and clouds, practiced

the covert start of the attack, and constantly renewed tactical procedures. The successful actions of the fighters of the KPA [Korean People's Army] testified not only to the good performance characteristics of the aircraft but also to the high level of the flight personnel's tactical thinking.

In connection with the fact that the cost of jet aircraft was higher than that of piston-driven aircraft and the number of fighters in the air forces of all countries had decreased noticeably, the principle of economy in expenditure of forces which had been noted even prior to World War II received development in Korea. It was possible to accomplish former missions in a fewer number of aircraft through an increase in the destructive force of weapons and precision of the attacks. The number of weapons points on the fighters remained the same but the caliber was increased somewhat as was the cannon rate of fire. Thus, the striking power of the fighter did not change to the same degree as the remaining performance characteristics (speed, altitude, and capability for maneuver) and the question of the rational expenditure of forces remained a problem as formerly.

The retention of cannon armament and the absence of guided missiles and radar sights on the fighters did not permit a fundamental change in tactics.

/The second period in the development of fighter tactics (1954-1959))/ is characterized by the mastery of new methods for combating aerial targets under various situations. The appearance of air-to-air missiles increased the range of effective fire several fold. The capability of destroying unobserved targets visually using on-board radar sights appeared.

In this period, views on the use of tactical fighters differed little from the views on the employment of AD [air defense] fighters since aerial battle was conceived of as a strictly regulated flight of a fighter to intercept which was accomplished, as a rule, by one "dagger-like" attack whose trajectory was close to a straight line.⁶

The primary threat both for front and for rear-area objectives consisted of aircraft which carried nuclear weapons. The best method for their penetration to the strike objective was considered to be a single flight with maximum use of maximum speed and all possible camouflage and deception measures. The probability of overcoming ground-based AD means was substantially increased at night, under difficult weather conditions, and in the stratosphere. According to foreign views, supersonic carrier-aircraft could employ a high-speed breakthrough without cover. The tactics of the fighters were reduced to the requirement to destroy the target prior to its crossing a certain line; otherwise, the threat of the enemy's launching of a strike against the covered objective became real.⁷ Envisioned for the accomplishment of this mission was the stand-by duty of fighters at the airfield (if they succeeded in taking off and intercepting the target at an assigned line) or else patrolling in a waiting zone in the air (with a limited time reserve). It was difficult for the pilot to find a single aerial target not only at night, but also during the day; therefore, its interception could be accomplished only with the assistance of the command post whose combat section determined the fighter's flight parameters,

selected the most advantageous combat maneuver in the given situation with consideration of the time remaining, and guided the aircraft to the rendezvous point with the enemy by commands over the radio.

The arrival of supersonic airplanes in the inventory which were equipped with guided missiles and electronic systems for search and aiming and with more improved communication systems, systems for radio-technical control and navigation, and also for the automation of the process for control and guidance from command posts created the material preconditions for fundamental changes in the nature of aerial combat.

If we tell it briefly, the basic trends in the development of methods for the combat employment of fighters were reduced to the following: a reduction in the composition of the groups which entered into battle simultaneously; rectification of the maneuver of the attacking fighter; the decisive significance of the first attack which should complete the battle.

Each of the pilots operated without the support of the others: bomber-carriers did not need a concentration of forces to destroy an objective nor did fighters require such a concentration to destroy a single bomber. This determined the possibility for the emergence of duel situations which were characteristic only of air battles in the period of World War I. The difference was that the closing speed increased almost ten fold. This was the first trend.

The second trend in the development of forms of aerial battle consisted of a decrease in the curvature of maneuver of the attacking fighters. It followed from a change in the turning parameters of the aircraft at high subsonic and supersonic speeds. If the flight speed increased two fold, the turning radius increased four fold (with the same g-force). Furthermore, in accordance with the tactics of a high-speed breakthrough the bombers did not undertake sudden maneuvers, adhering to the specific flight program which had been introduced into the on-board navigational system.

The picture of aerial battle and the sequence for the accomplishment of missions by the fighter changed sharply. After the detection of the carrier-aircraft (using radars) and its attainment of a certain line the command post gave the on-call fighter the command to take off. At the same time, initial data went to a computer. All changes in the target's flight conditions were considered by the operators of the guidance radar to generate correction commands. The pilot received refined information and changed his course, altitude, or flight speed. Automation of control became possible because the flight path to intercept was described mathematically. It consisted of a set of standard maneuvers which regulated the procedure for the accomplishment of the mission.

The fighter pilot adhered strictly to the flight program determined from the ground, discovered the target using the on-board radar, switched over to its automatic tracking ("lock-on"), closed to the necessary distance, and fired his missiles.

The third trend had a most serious influence on the change in tactics since the hopelessness of a repeated attack was disclosed (the following term will appear subsequently: the tactics of a one-time attack).

One of the most important features of aerial battle was considered to be the necessity to destroy an aerial target with the first attack. If such a condition was desirable but not always decisive in the Great Patriotic War years--after the failure of the first attack destruction of the enemy in a subsequent attack was not excluded--in the period being described it became a law for each fighter.

The first attack was also the last at the same time, the one which completed the battle, because the fighter had to accomplish a turn for a second pass which, with the great speeds and flight altitude, was measured in many kilometers and was prolonged with regard to time. In the course of the maneuver the pilot inevitably lost the target and, during this time, the enemy crossed the line of interception. Furthermore, the fighter, having a limited supply of suspended missiles, usually returned for a landing after the first unsuccessful attack.

The stages of battle were limited to approach, attack, and emergence from it. The precision of programmed actions became the main item in the actions of the pilot as well as of the combat section. Instrument flying was moved to the foreground. The altitude and speed characteristics of the aircraft began to prevail over maneuver characteristics. The cannon were removed from almost all fighters in the world as a weapon which had lost its future.

Fundamental changes in the tactics of fighters were connected primarily with the tactics of aircraft which carried nuclear weapons. New combat procedures were suitable not so much for aerial combat between fighters as for the destruction of carrier-aircraft which represented the greatest threat for the troops (objectives) being covered.

/The third stage (1960-1973)/ was connected in the closest manner with the development of tactics for the next generation of jet fighters.

This stage seemed to be divided in half: the first was characterized by the striving to bring the methods for interception to perfection while the second reflected the effect of the combat experience obtained in Southeast Asia.

The course and results of aerial battles in the sky of Vietnam were widely illuminated in the foreign press. An analysis of numerous articles permits drawing some generalized conclusions concerning the changes which took place in tactics.

The first one which attracts attention is the high evaluation of the combat qualities of the MIG-21 fighter aircraft which was piloted by the pilots of the Vietnamese People's Army. The American journal AVIATION WEEK wrote: "The meeting with the MIG-21, which is somewhat faster and more maneuverable than the 'Phantom' fighter, does not bring much joy to the American pilots. They know that it is possible to avoid great losses only by using high skill."¹⁰

The MIG-21 fighters appeared as part of the air force of the Democratic Republic of Vietnam in April 1966 (prior to this, the raids by American aviation

were repelled by the subsonic MIG-17 aircraft). The qualitative jump immediately entailed quantitative changes. If at the beginning of 1966 11 American and 9 North Vietnamese aircraft were shot down in aerial battles (ratio of losses 1.2:1), then from May to December the results of aerial battles with participation of the MIG-21 provided a ratio of 4:1 (47 enemy aircraft shot down and only 12 friendly aircraft lost). And this with overwhelming numerical superiority of American aviation.

The combat capabilities of the MIG-21 were so high that the North Vietnamese pilots boldly went into battle even with the enemy's large numerical superiority in the air. The MIG-21 emerged from all difficult situations in combat with contemporary tactical airplanes of various types with honor just as the MIG-15 won worldwide recognition in Korea.

Foreign specialists considered one of the chief lessons of Vietnam to be the downfall of the tactics of interception (they remained in the inventory of air defense fighter subunits). Actually, the tactics of a one-time rocket attack proved to have little suitability under conditions of a non-nuclear conflict. Prior to the war in Indochina, many believed that the conduct of maneuver battle was not inherent to supersonic fighters. This opinion was completely refuted. Foreign observers admitted that the nature of counteraction on the part of the MIG-21 caused the execution of maneuvers in battle which did not submit to any mathematical description. The pilots had to relearn and restore lost skills in piloting, mutual support, spatial orientation, and caution and so forth when the war was already being fought.

The primary mission for the American fighters became the support of the other types of aviation rather than interception--the covering of tactical strike aircraft and B-52 strategic bombers which executed raids against objectives in North Vietnam. Six to eight medium-caliber conventional bombs were suspended on each F-105 fighter bomber. As a result of this the drag and the load on the wing increased sharply and maneuverability worsened accordingly.

The heavy and unmaneuverable airplane could no longer defend itself successfully from the attacks of fighters armed with air-to-air missiles, that is, could not oppose a machine which was specially prepared for the conduct of aerial battle and not for the launching of an air strike against a ground target. It was necessary to detail mobile covering groups, fighter screens, and close escort fighters. In the air, the airplanes formed up in a mixed combat formation whose flexibility depended on the organization of coordination between them.

It was necessary to cover big groups of bombers on literally all stages of the flight above enemy territory, fearing the bold attacks of the Mig-21. The arrangement of forces during covering was different and depended on the composition of the strike groups (fighter-bombers, attack aircraft) and the expected enemy counteraction. In accomplishing one common mission, the leaders of the fighter groups were located beyond the limits of visual contact. Their actions were no longer coordinated by a ground command post, but by an airborne command post which moved out to the area of combat operations but was located outside the zone of damage of enemy air defense.¹¹

Escort fighters usually conducted defensive battle, defending the strike groups. Considering this special feature, the American "Phantoms" with air-to-air missiles on board formed up in two echelons. One group (long-range protection) moved out ahead or moved in an open formation, observing a considerable frontal interval between airplanes and having relative freedom of action. Being a unique patrol, it accomplished reconnaissance in force. The second group did not move away from the bombers beyond the limits of designated distances and vertical separations but, when necessary, increased the efforts of the forward group. Furthermore, a screen was detailed which moved out to the area for the launching of the strike with a certain lead in time in relation to the reaching of the line for spreading out by the strike group. In the opinion of foreign specialists, such methods for deploying the fighters in the air could be employed only with large numerical superiority over the enemy and the concentration of large air forces on a limited sector of territory. The American journal AIR FORCE wrote in this connection: "American aviation possessed absolute numerical superiority which unquestionably determined the selection of methods of operation. In case war breaks out in other theaters of operations, there are no grounds to count on such a situation."¹²

Breaking through the triple cover of the airfield-blocking, screening, and close escort groups the North Vietnamese fighters, according to the evidence in the American press, often employed the tactic of a one-time attack which was conducted at maximum speed with the observance of camouflage and deception measures. However, this was not a programmed flight, but a thoroughly prepared tactical procedure. Here, it was not a single target which was intercepted, but a strike was launched at the most vulnerable point of the enemy combat formation. The Swiss journal INTERAVIA wrote that "the North Vietnamese fighters did not employ the tactic of massed repelling but committed pairs of airplanes to battle against the fighters of the U. S. Air Force in turn. The opinion exists that the employment of the tactic of surprise attacks with small forces during raids was the basic factor which ensured the effectiveness of the MIG-21 fighters of the Democratic Republic of Vietnam's air force. This example shows that it is necessary to study all elements of contemporary tactics."¹³ If the attack began prior to the launching of missiles, a pilot from the screening group was to accomplish a sharp turn in any plane in order to remove the attacker's possibility to employ his weapons. In the case where the attacker does not abandon the pursuit, a maneuver engagement was initiated. Thus, the pilot was required to skillfully combine maneuver and fire, these elements receiving new content.

The air-to-air guided missiles played their role in changing the methods for the conduct of aerial battle. If the enemy succeeded in attacking with surprise, covertly reaching the initial position for launching, then he could be destroyed from a much greater distance than when employing cannon fire. Calculations conducted by American experts showed that the majority of the "Phantoms" were shot down under conditions where the crew did not succeed in undertaking effective protective measures in time, that is, accomplishing a defensive maneuver.

The appearance of new equipment will obviously cause the necessity for further improvement in fighter tactics.

Thus far, the tactics for employment of the new generation of aircraft are in the simulation stage but their outlines have already been defined. Thus, to American specialists aerial combat appears to be a combination of fighter operations at medium (up to 80 kilometers) and close (up to 5 kilometers) distances. The crews of the F-15 and F-16 aircraft in close tactical coordination are to realize this concept. The F-15 fighter armed with missiles of two types, the "Sparrow" and the "Sidewinder," are intended for control of air space at distances out to 80 kilometers, and the F-16 is intended exclusively for the conduct of close maneuver battle.

The American journal AIR FORCE writes: "If the enemy fighter can be detected and identified at a great distance, its destruction can be accomplished using long-range weapons. But under actual conditions of a combat situation, situations often develop in which the enemy appears in the field of vision suddenly (especially over his own territory). Such situations are possible when clearing the air space, blocking air fields, conducting reconnaissance, and so forth. Therefore, situations will become typical where there will not be time to go into battle at a long range and the initiation of battle of the classic type--a close maneuver battle--will become inevitable. The following conclusion can be drawn: characteristic of contemporary aerial battle are a powered maneuver in any plane, fluidity, and short distances."¹⁷

The increased attention to classical forms of battle in which the relative equality of its basic elements is preserved--maneuver and fire--does not mean that the interception mission has been removed from the agenda. The struggle of fighters (and not only AD fighters) against single carriers of nuclear weapons is also considered to be a basic tactical mission, especially when it is expected to be accomplished under difficult weather conditions and at night. Therefore, radar sights are a mandatory accessory for any fighter aircraft to include those intended for the conduct of close maneuver battle. The F-1 (France) and "Viggen" (Sweden) airplanes have presently appeared and have been optimized for the accomplishment of the interception mission at low altitude.

/The fourth stage (from 1974)/ is characterized by the mastery of the third generation of jet combat airplanes which are distinguished by improved performance and firing capabilities. The broad employment of electronics, automation, and means for the control and guidance of the fighters has expanded considerably the range of their operations and their combat capabilities.

The experience of local wars graphically showed the necessity to develop the tactics of both close maneuver and long-range battle which is conducted at distances exceeding visual contact between opponents. The basis of long-range combat is a surprise one-time attack (series of attacks) which is inherent to interceptors while close battle of classical forms is typical of group engagements in the air. Mastery of the methods for the interception and destruction of an energetically maneuvering enemy is evidence of readiness to wage contemporary battle.

However, in a maneuver battle where the element of surprise lost its significance, the role of guided missiles was noticeably reduced. "In the course of combat operations in Southeast Asia it was learned that the 'Sidewinder' and 'Sparrow' guided missiles are far from ideal weapons to destroy an energetically moving fighter, especially at short distances," wrote the American journal AIR FORCE.¹⁴

The reason was to be found in the fact that guided missiles of this type were intended for interception, that is, were intended for employment with a straight-line attack of the target. But it was difficult for the pilot to use them in maneuver battle. It was for this very reason that cannon were hastily installed on the "Phantoms" while the war was already in progress; they are close-range weapons.

The foreign specialists also include among the special features of fighter tactics in aerial battles in Indochina the incomplete use of the speed and altitude capabilities of the aircraft. Supersonic fighters able to fly at an altitude of 18,000 meters rarely operated in the stratosphere (at an altitude greater than 9,000 meters) and rarely crossed the sound barrier.¹⁵ This was explained by the fact that the speed for best maneuverability is in the transonic region into which the enemies inevitably "fell" while trying to come out on each other's tail (or to conduct an attack at a short angle of approach).

Aerial combat began most often at an altitude of 4,000-5,000 meters since the covering groups operated namely in this range, being in a common combat formation with the bombers. Furthermore, maneuvering conditions improved noticeably at medium altitude, thanks to which it was possible to create large g-forces and decrease the turning radius.

The American journal FLYING [as transliterated] REVIEW wrote: "The experience of Vietnam and the conditions for conducting the air war defined new requirements for the airplane intended to win air superiority. They differ greatly from the requirements imposed on the F-104 Lockheed interceptor. The results of battles with the MIG-21 fighters in the area of Haiphong and Hanoi changed the view of the Air Force command on the employment of tactical aviation."¹⁶

All this was reflected in the performance characteristics of new fighters. Thus, the maximum speed and service ceiling of the F-15 and F-16 airplanes, which are intended to win air superiority and which arrived to replace the F-4 "Phantom" type of tactical fighters, increased insignificantly. At the same time, primary attention was turned to increasing the thrust-to-weight ratio and maneuverability necessary for the conduct of aerial battle of the classic forms. We recall that in the period of fighter improvement the main struggle was waged for speed and altitude. Thus, tactics influenced the formation of requirements for new aviation equipment.

Failures in Vietnam forced the American command to turn its attention to improving air-to-air missiles. The "Sidewinder" and "Sparrow" were improved and the "Agile" missile which has been specially intended for close maneuver combat is being prepared for acceptance into the inventory.

Thus, tactics have constantly changed in the postwar period, being moved by the experience of local wars and scientific foresight. Surprise, determination, clearly organized control and coordination, maneuver, the high state of training of the flight personnel, advantages in the aircraft's armament and performance characteristics--all these factors have not only retained their significance since the time of World War II but have also received further development.

FOOTNOTES

1. The article does not consider such questions as the blocking of airfields by fighters, actions against ground targets, and the conduct of aerial reconnaissance.
2. Designed by A. I. Mikoyan and M. I. Gurevich, the MIG-15 surpassed the piston fighter in all characteristics. Its maximum speed was almost doubled and approached close to the speed of sound (1050 kilometers per hour), its service ceiling became 3,500 meters greater, and its vertical speed also increased (the time to gain altitude decreased). The jet aircraft was armed with two 23-mm and one 37-mm cannon and had better power characteristics which permitted the pilot to seize the initiative in aerial battle and maintain an advantageous position in relation to the enemy.
3. INTERAVIA, No 1, 1952.
4. TRUPPENPRAXIS, No 3, 1965, pp 205-206
5. "Istrebitel'naya aviatsiya v Otechestvennoy voyne" [Fighter Aviation in the Patriotic War], Voenizdat, 1946, p 81.
6. AVIATSIYA I KOSMONAVTIKA, No 1, 1965, p 27.
7. Foykhter, "Istoriya vozduшной войны v ee proshlom, nastoyashchem, i budushchem" [History of Aerial Warfare in Its Past, Present, and Future], Voenizdat, 1956, p 322.
10. AVIATION WEEK, No 10, 1967
11. Airborne command posts were installed in heavy, slow airplanes and had a surveillance radar.
12. AIR FORCE, No 12, 1972, p 37.
13. INTERAVIA, No 2, 1974.
14. AIR FORCE, No 8, 1971.
15. INTERAVIA, No 7, 1969.

16. FLYING REVIEW, No 5, 1970

17. AIR FORCE, No 3, 1973, p 219.

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ZHUKOV ON ORGANIZATION OF OPERATIONAL CAMOUFLAGE AND DECEPTION

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[Article, based on the experience of the Great Patriotic War, by four times
HSU Mar SU G. Zhukov, published under the journal rubric "From Unpublished
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Passages enclosed in slantlines printed in boldface]

[Text] The success of an offensive operation depends to a considerable extent
on the ability to conceal from the enemy the operation which is under prepara-
tion and in which large numbers of ground and air forces and materiel usually
participate. Secrecy in the preparation of an operation is attained by a
system of various measures which are directed toward the creation of the most
favorable conditions for the accomplishment of the missions which have been
assigned to the troops of the front.

The experience of the Great Patriotic War graphically showed that secretly
prepared operations were surprises for the enemy. Each time, operational sur-
prise stunned the enemy and deprived him of the opportunity to offer organized
resistance. However, it is a very difficult matter to conceal from an enemy
who has contemporary reconnaissance means an operation in which the forces
and means of all combat arms are participating. It requires great skill,
initiative, and creativity from the organizers of the operation and irreproach-
able execution of all measures contemplated by the plan for operational camou-
flage and concealment.

All measures for operational camouflage and concealment should follow from
the concept for the forthcoming operation and comprise an integral part of
the commander's decision and plan of operation.

In the Patriotic War operational camouflage and concealment provided good re-
sults because they were planned, prepared, and executed on the basis of the
centralized leadership of the Headquarters, Supreme High Command [Hq SHC].
This principle for the organization of operational camouflage and concealment
was most important and was steadfastly implemented in all operations by all
fronts.

/The mission of operational camouflage and deception/ is to conceal the preparation of an operation and deceive the enemy concerning the concept and nature of the forthcoming operations of friendly troops. Operational camouflage and deception in the course of the war were organized and conducted by a front on the basis of strict centralization and in coordination with adjacent fronts.

The plan for operational camouflage and deception envisioned: measures which ensure secrecy in preparation of the operation; the organization of false operations, that is, the demonstration of false regroupings, dummy assembly areas and the preparation of an assault position for the troops, false directions of the main effort, the conduct of false defensive measures, and the creation of dummy radio nets and communication centers; the deployment of dummy aerial complexes and concentration of dummy air formations on them; the propagation of false sounds and data in the combat zone and in the enemy's rear area.

All measures on operational camouflage and deception conformed strictly to the instructions of higher echelons. The results of the effect of operational camouflage and deception were checked systematically by all types of our reconnaissance.

/Methods and procedures for implementing operational camouflage and deception/, as the experience of the war showed, could not be the same in all operations. Each camouflage and deception operation with its specific goals, missions, scales, and means must correspond to the general concept of the basic operation and is its component element. It should give strict consideration to the overall operational situation and the tactics and equipment of the front's troops.

The plan of measures for operational camouflage and deception in the war years was simple in concept. The actions of the troops which accomplished camouflage and deception measures did not differ in tactics and equipment from the actions of the basic troops. They convinced the enemy and caused his reconnaissance no doubts while the camouflage and deception measures of the formation of troops which had prepared the main operation gave the reconnaissance no grounds to disclose the preparation of the main operation from any signs.

The troops had good knowledge of the signs from which enemy reconnaissance usually disclosed the operations under preparation. These are, first of all, more active regrouping and railroad and motor vehicle shipments in the front and army rear areas; the establishment of new regulating and unloading stations, warehouses, and various collecting points; the establishment of new supply routes and the repair of roads, bridges, and crossings; the evacuation of the sick and damaged materiel to the rear; intensification of air and agent and, subsequently, ground reconnaissance; the appearance of reconnaissance groups; the emergence of new airfields and new aviation formations; the performance of engineering work on improving the attack position; an increase in night movements to the rear area of the troops which are in direct contact with the enemy; an increase in the noise caused by troop movements and the performance of various work; compacting of combat formations and withdrawal of certain large

units to the rear and the appearance of new large units, new gun positions for heavy artillery, heavy tanks, and self-propelled mounts; strengthening of the air defense of railroad shipments, regulating stations, supply stations, assembly areas, and so forth. Furthermore, as the preparation of the operation is completed activity beyond the front line becomes more intensive: battle reconnaissance is intensified on a broad front; new wire communication lines, radio nets, and radio signals of radio stations appear; artillery registration is accomplished; and new OP's [observation post] and CP's [command post] are established.

Consequently, the task of the command consists of concealing these actions from the enemy so that his reconnaissance does not notice the measures which are being conducted under any circumstances.

/How to conceal the measures which are being conducted/, which forces and means should be allocated for this--all this was reflected in the plan for operational camouflage and deception, which was worked out by the staff and approved by the front commander, with exhaustive completeness.

From what has been stated above it follows that if enemy reconnaissance can disclose the operation under preparation from various signs, the actions of the troops intended for the deception maneuver and the misleading of the enemy should be such that enemy reconnaissance must note the measures conducted in accordance with the plan for operational camouflage and deception and, from the signs which have been noticed, would be completely confident that it is just here that preparation of the operation began.

For the success of the deception maneuver the units detailed for the conduct of the measures should operate so skillfully that they are not open to question for enemy reconnaissance while their actions would appear to be convincing and in no case would appear to be coarse in regard to the technique of execution.

For example, the enemy knows that we do not employ radio communication during regroupings, and suddenly the units which have been detailed for the deception maneuver begin to employ it; in this case, it will be clear to enemy reconnaissance that we are operating abnormally, not in accordance with our regulations, and these actions follow from certain special considerations.

Thus, in the course of the war when preparing an offensive operation the front commander and staff faced the missions, on the one hand, to conceal preparations and, on the other, to show it in a false direction in order to distract the attention of enemy reconnaissance from the direction where the actual operation is really being prepared and to attract it to the false direction.

/The methods and procedures for the implementation/ of operational camouflage and concealment depend on the situation each time. They cannot be the same for all operations. Let us turn to several examples of the Patriotic War.

First example. In the Vislo-Oder operation the main effort by the troops of the First Belorussian Front was prepared in the center south of Warsaw from the Pulovski and Magnushevskiy beachheads in the general direction of Radom, Lodz, Posnan, and Kuestrin. The most tremendous quantity of troops and means were drawn in for the conduct of this deep operation. The operation of the 1st Ukrainian Front was prepared to the left, in Sandomir and, to the right, by the 2nd Belorussian Front.

In accordance with the instructions of the Hq SHC, the command of the 1st Belorussian Front was assigned the mission, on the one hand, to conceal the preparation of the true operation on the Lodz direction and, on the other hand, to mislead the enemy and demonstrate the preparation of a false operation on another direction to which it was necessary to distract the attention of enemy reconnaissance and, if possible, some of his forces.

The most extreme section on the front's left flank at the limiting point with the 1st Ukrainian Front was selected as the area for the conduct of the false operation. Questions of the camouflage and deception of our actions were coordinated with the General Staff and approved by the Hq SHC.

In order to conceal the preparation of the operation south of Warsaw from the enemy, the command of the 1st Belorussian Front decided to demonstrate the concentration of big tank and mechanized large units, combined-arms large units, aviation, engineer troops, a large quantity of artillery, and the intensification of railroad and motor-vehicle shipments.

To demonstrate the concentration of tank and mechanized large units the engineer troops of the front constructed at least 1,000 dummy tanks and self-propelled artillery mounts and hundreds of mockups of motor vehicles. Some of the radios of the 1st and 2d Tank Armies, which were well known to the Germans from the specific nature of their operation, were attached to this mass of "tanks" and "vehicles. The accumulation of this "equipment" was shown to the enemy reconnaissance consistently, in various places, and in accordance with a plan for regroupings and concentrations which was worked out ahead of time to create the complete impression of a planned regrouping of troops.

Several dozen actual tanks and vehicles were specially detailed to enliven the movement of the tank and mechanized troops and to make the trails of caterpillar tracks. In accordance with a plan which was worked out ahead of time, the engineer troops built new bridges, repaired old ones, and constructed and improved supply routes in an intensified manner.

To demonstrate the concentration of aviation, several hundred mockups as well as airfield complexes were constructed and several dozen actual airplanes were detailed. Aerial reconnaissance was intensified, planned aerial photography was accomplished in the enemy's tactical and operational zones, and other work was accomplished to convince enemy reconnaissance that something important was being prepared here.

And as soon as enemy reconnaissance probed for the front's measures in this area, we intensified railroad and motor vehicle shipments in the rear area

and the movement of artillery and troops without delay in the immediate and army rear, demonstrated the preparation of food in the mobile field kitchens, and lit campfires.

As a result of all these measures, the enemy began to behave restlessly on the FEBA [forward edge of the battle area] and intensified observation. Then we immediately began the dummy improvement of the attack position, observation posts, and artillery firing positions, began to conduct officer reconnaissance and the registration of large-caliber guns, and to build additional roads; we intensified reconnaissance and the capture of prisoners and, finally, we initiated reconnaissance in force. In short, we showed the enemy the intensified course of preparations for a large offensive.

All our active camouflage and deception measures seriously convinced the enemy that a big offensive operation was being prepared in this very area. The following fact can serve as confirmation: the enemy regrouped the 1st Tank and 1st Motorized Divisions toward our left flank from the area of Warsaw and Radom, and this played directly into our hands since, by his regrouping, the enemy seriously weakened his defense in the direction of our forthcoming main effort. Furthermore, the regrouped divisions fell into the double envelopment of the 1st Belorussian and 1st Ukrainian Fronts when they launched their offensive.

What was done in the center of the front where the real front operation was prepared? There, the impression of complete calm was formed in the enemy and the intensification of defensive work was shown. All troop trains with tanks and artillery were camouflaged as the shipment of hay or as construction material (boards, timber, panels, and so forth) on the approach to the front and to the army rear areas. Troop trains were brought up for unloading only at night or under heavy fog. Then the artillery and tanks were immediately moved out to previously prepared areas. Trails from the caterpillar tracks were camouflaged prior to dawn and the empty cars were driven away and dispersed in the front's rear area. Troops were brought up to the front only at night, in small units, bypassing large populated places and cities.

Engineer work on preparing the attack position was conducted only at night, and prior to dawn everything which had been done during the night was thoroughly camouflaged to blend in with the surrounding terrain. Camouflage was checked by officers during the morning airplane flights. Commandant's service and traffic control service were organized and they halted any movement prior to dawn; individual vehicles were an exception. Supplies being brought up, all transport, artillery prime movers, and so forth--everything was dug in and camouflaged.

To keep the preparation of the operation in strictest secrecy, the working out of all plans was conducted in the staffs of armies and the front by a strictly limited group of persons. No written documents were given to anyone, being restricted only to oral orders. Written directives were given to the armies several days prior to the start of the operation.

As a result of the skillful conduct of the measures indicated above, the 1st Belorussian Front succeeded in concealing the preparation of such a tremendous operation and achieving complete operational surprise.

Captured Germans showed that they had not noticed any preparations for the operation and that such a strong blow which shook the entire defense was completely unexpected. The troops advanced from the Visla to the Oder without stopping.

Consequently, the plan for the organization of operational camouflage and deception was completely successful for the command of the 1st Belorussian Front since, on the one hand, the preparations for the offensive operation were concealed and, on the other hand, the enemy's attention was attracted to a false area.

Second example. In 1944, Hq SHC prepared the biggest operation of four fronts for the liberation of Belorussia. As is known, the main efforts in this operation were prepared by the 1st Baltic and 3d Belorussian Fronts from the north to the south and southwest from the area of Vitebsk while the 1st Belorussian Front prepared the main effort from the area south of Bobruysk in the northern and northwestern directions. Hq SHC assigned the mission to the fronts to cut off the enemy's Vitebsk, Bobruysk, Orsha, Mogilev, and Minsk forces and to encircle and then eliminate them.

Hq SHC required that the preparation of this most important operation be concealed by all measures, especially preparation of the main efforts from the area south of Bobruysk and west and southeast of Vitebsk and, on the other hand, that the impression be created that a strike was being prepared from the Orsha-Rogachev front in order to attract the attention of the Germans to this sector and tie down their forces on this direction so that they could not participate in repelling the main efforts being directed from the south and west.

To attain complete surprise, it was decided to launch the main effort of the 1st Belorussian Front through the forested and swampy area, enveloping Bobruysk from the south and southwest. On the strength of almost impassable terrain conditions, the enemy did not assume that the Soviet Supreme High Command would risk a serious strike from the forest-swamp area and, therefore, he was not seriously concerned about the defense of this direction and even failed to reconnoiter this direction with sufficient activity. As is known, such preconception, presumption, and light-heartedness cost the German command dearly. The presence of large forest tracts worked in favor of the troops of the 1st Belorussian Front during the creation of a strong force there. This permitted accomplishing the required regrouping, concentrating the troops in the attack positions, and conducting the engineer preparation of the initial position even in daytime.

The troops of the left wing of the 3d Belorussian Front on the Orsha direction and the troops of the 2d Belorussian Front on the Mogilev direction, just as presumed by Hq SHC, tied down and attracted considerable German forces. As

we see, in its method and implementation the second example differed from the first example of the preparation of an operation and the method of operational camouflage and deception.

Third example. I recall the operational regrouping of two tank and one combined-arms army and two tank and one cavalry corps which was executed to smash the German Pomeranian force which Hitler intended for a blow in the flank and rear of the 1st Belorussian Front which had reached the Oder River.

Having smashed the Warsaw-Radom-Lodz enemy force and overcoming five defensive positions, the Poznan fortified area, and the deep Oder fortified area from the march, the troops of the 1st Belorussian Front reached the Oder River on a broad front from where it was intended to launch the final blow against Berlin and complete the defeat of Hitlerite Germany.

The 2d Belorussian Front which was operating on the right was turned to the north by the Hq. SHC for the final elimination of the East Prussian force and the seizure of Gdansk and the port of Gdynia. A sector of almost 300 kilometers was formed between the main forces of the 1st Belorussian Front and the troops of the 2d Belorussian Front which was weakly covered by the 1st Polish Army, a cavalry corps, and the 3d Army of the 1st Belorussian Front which were extended along the front. The 1st Ukrainian Front operated on the left, echeloned somewhat to the rear.

Consequently, the main forces of the 1st Belorussian Front were moved considerably forward where they dug in on beachheads on the west bank of the Oder River.

Our intelligence established that the Hitlerite command was assembling an army group in Pomerania consisting of several corps under Himmler's command whence, in the immediate future, it was intended to launch a strike in the flank and rear of the main troop grouping of the 1st Belorussian Front to press it against the Oder River and destroy it there.

J. V. Stalin called attention to the dangerous situation and proposed the immediate destruction of the German Pomeranian force after digging in on the Oder River, for which the necessary forces and means were to be shifted laterally to the north from the front's main forces.

The command of the 1st Belorussian Front was to accomplish an extremely difficult regrouping over a considerable distance along the front, ensure its complete secrecy, and prepare a surprise operation.

The command of the 1st Belorussian Front employed the following method and procedure for the camouflage and deception of this extremely difficult regrouping to implement its decision. First of all, the disengagement of the troops from the enemy at the front and the march were accomplished only at night. For the enemy to be convinced that the former large units were operating in front of him, it was decided to leave in contact with the enemy for the immediate future a portion of the tank armies' forces and some of the radios and radio nets of corps and a tank army. During the march, the units and large units were

categorically forbidden to use radios. All radios were placed under seal. Aviation was assigned the mission to prevent even one enemy airplane from passing through to the regrouping area.

Populated places and cities were bypassed on the march, for which commandant's service and traffic control service were thoroughly organized. The mission of the commandant's service included: seeing that secrecy was maintained, conducting a thorough check of camouflage discipline, and collecting and sending all stragglers to their large units.

The traffic control service ensured the movement of troops over precisely designated routes to established areas and at the designated times and the observance of march discipline. Furthermore, the purpose and mission for the regrouping of each large unit were kept in strict secrecy from all troop personnel. Only some army commanders and a limited group of supervisory personnel of the front's staff knew them.

As a result of the well-organized regrouping and precise execution of the plan for operational camouflage and deception, the displacement of this most tremendous group of forces along the front was not noticed by enemy intelligence. The command succeeded in ensuring the operational surprise of the strike force. As a result, the Pomeranian force was swiftly smashed and Pomerania was completely cleared of Germans.

It should be said that the Soviet Supreme High Command almost always succeeded in concealing operations under preparation from the Germans. As a rule, the reasons for success consisted of the fact that the concept of the deception maneuver was always tied in with the concept of the operation. All planned camouflage and deception measures were conducted in accordance with a plan which was worked out ahead of time and which considered not only the interests of the fronts, but also all requirements of Hq GHQ in supporting the measures of adjacent fronts. Furthermore, operational camouflage and deception were included each time as a component element of the commander's decision and were executed under his direct supervision and that of the front chief of staff.

/The forces and means for operational camouflage and deception/. As the experience of the war has shown, there should be no sparing of forces and means to implement a false operation because a well organized deception maneuver is better able to convince enemy intelligence and is less likely to cause him to doubt the truthfulness of the false operation under preparation, all the more since the preparation of dummy tanks, self-propelled artillery mounts, and motor vehicles, even in thousands of units, does not require special efforts of the front. The engineer units can easily cope with this. The matter was somewhat more difficult in allotting railroad transport, but even in this problem, as practice showed, camouflage and deception measures were warranted by their results.

The following were considered for the most correct calculation of forces and means for operational camouflage and deception: the goal, nature and scope of the forthcoming operation; the concept, missions, and forms of the deception

maneuver; the nature of the terrain and the size of the area where the camouflage and deception measures are conducted; weather conditions and time of year; conditions for coordination and distance of the area for the deception maneuver from the front troop formations which are preparing the actual operation.

Proceeding from these basic problems, the commander must decide the question of the forces and the means to be detailed for the accomplishment of the plan of operational measures. In each individual case, it followed from the specific content of the camouflage and deception plan.

The following conclusion can be drawn from the experience of the Great Patriotic War: to designate a rifle division and tank division detail one rifle company, one tank company, 100 dummy tanks and self-propelled artillery mounts, one battery and 20-30 dummy guns, 10 wheeled vehicles, 60-80 dummy vehicles, and 10-12 dummy kitchens. To designate corps and army formations, in addition to the means allotted to designate divisions it is necessary to detail army radios and radio centers with personnel who are well known to the enemy by their work. It is useful to employ loudspeakers to simulate noises.

Engineer camouflage units and signal units were detailed in accordance with the plan for actual work.

/Organization and conduct of operational camouflage and concealment in the fronts/. The concept of the deception maneuver was determined by HQ GHQ. The decision for operational camouflage and deception was made by the front commander. Its plan was developed by the chief of staff and approved by the front commander. The army conducted operational camouflage and deception measures only on instruction of the front commander.

On the basis of an operational directive from Hq GHQ, the front commander made decisions for operational camouflage and deception. They were not separated from one another but comprised a single entity. The entire concept for the operation was interconnected with the concept for the deception maneuver and the goals for operational camouflage and deception.

To keep the deception maneuver in great secrecy, as the experience of the war has shown, the front commander must not set forth the concept for operational camouflage and deception when presenting his decision for the operation. A limited group of people should know the decision for operational camouflage and deception, and only those who are involved in the development and practical execution of the measures in the plan for the deception maneuver.

In his decision for operational camouflage and deception the front commander indicated: the concept of the deception maneuver; the forces and means detailed to conduct the plan for operational camouflage and deception; the times for preparation and the procedure for conducting the plan for operational camouflage and deception; the procedure for checking the execution of camouflage and deception measures.

The plan for operational camouflage and deception which was worked out by the staff after approval by the commander was the guidance document for the staffs of the combat arms which implemented the practical accomplishment of this plan. The chief of staff involved the chief of the front operations directorate, the commanders of the combat arms, their chiefs of staff, and the chiefs of services in its preparation. All work on the planning and preparation of the plan for operational camouflage and deception was conducted under the direct supervision of the front chief of staff.

Usually, the plan for operational camouflage and deception was prepared in one copy in the form of a table in which the following questions were illuminated: the concept of the deception maneuver; the tasks of the combined-arms, tank, and air armies in accomplishing the plan for operational camouflage and deception; the methods of operational camouflage and deception; and the times, forces, and means allotted for the accomplishment of the deception maneuver.

The plan for operational camouflage and deception set forth measures separately for the preparatory period and in each subsequent stage of the operation. It indicated who executes the check of the accomplishment of camouflage and deception measures and which radio- and other types of signals, on the transmission of which the actions of troops which are envisioned by the plan for operational camouflage and deception must be halted, are established. Special maps which designated the deception maneuver of the front's troops by stages of the operation were appended to the plan.

After the plan for operational camouflage and deception with all its appendices was signed by the commander, it was sent to Hq GHQ for approval together with the operational directive and the plan for the operation.

On the basis of the approval which was received, the front staff transmitted to the troops and staffs the appropriate instructions concerning the procedure and times for the accomplishment of the plan for operational camouflage and deception. Simultaneously with the formulation of the missions for operational camouflage and deception, the front chief of staff did not overlook the possibility of using the front's intelligence means to establish how the camouflage and concealment measures which were conducted influenced the condition and behavior of the enemy.

It should be especially stipulated that neither the troops which implemented the plan for operational camouflage and deception nor the reconnaissance units and organs which checked the results of the camouflage and concealment which were conducted should know the purpose of the measures which they conducted in this regard.

/The conduct of operational camouflage and deception in the course of an operation/. Measures on operational camouflage and deception were planned and conducted not only for the period of preparation of the operation, but also in the course of it. Naturally, in the period for the preparation of the operation more time was spent on the execution of the deception maneuver than in the course of the operation. This was explained by the fact that with the

start of the operation both sides conducted active operations and, consequently, there were more unforeseen instances while the time for the conduct of difficult camouflage and deception measures which are great in content was less. It was more difficult to mislead the enemy under these conditions. But, however, we should not draw the conclusion that operational camouflage and deception cannot be conducted in the course of an operation. For the preparation and conduct of camouflage and deception measures during an operation in the course of an offensive, considerable creative work was required of the front commander and staff as well as of the commanders of the combat arms and chiefs of services in regard to determining the content as well as the extent of camouflage and deception measures.

Prior to the start of the operation, the deception maneuver was prepared and executed in a considerably more systematic manner. But with the start of the operation the front commander and his staff, devoting special attention to the combat operations of the troops, also directed the conduct of operational camouflage and deception on the strength of the operational situation which developed specifically and changed suddenly. This required more efficient and firmer supervision of operational camouflage and deception and, the main thing, it was necessary not to become fragmented on the accomplishment of minor missions and but to ensure the timely preparation and conduct of deception maneuvers which would force the enemy to withdraw his reserves to sectors which were advantageous for our troops and expend these reserves prematurely. The efforts of the front command were also directed toward the striving to attain the required results when determining the methods and forms for the deception maneuver in the course of the operation.

Let us take the case where, prior to the operation, the enemy does not know the direction of our main effort, or the composition of the second echelons and reserves of the front, or their place in the operational formation of the troops. Evidently, in this situation, with the start of the offensive the front commander will try to conceal from the enemy for as long as possible the true direction of the main effort and disposition areas and the direction over which the second echelons and reserves of the front will move out. A deception maneuver may be prepared for this which, at the start of the operation, will show the enemy false directions for the main effort and a false disposition area as well as a false direction over which the second echelons and reserves will move out.

For this purpose, both combat troops as well as specially detailed camouflage units with prepared garnishes may find wide employment in the course of an operation for the execution of a deception maneuver.

As many forms of deception maneuver can be employed in the course of an operation as it has concepts or stating it more precisely, there should correspond to each operational decision a form of deception maneuver which is inherent to this decision.

In selecting the form and content of the deception maneuver in the course of an operation, as experience shows, one should first of all understand the goal

of the given stage of the operation and by the accomplishment of which missions for operational camouflage and deception the attainment of the operation's final goal can be ensured.

The following can be included among such most important missions at various stages of an offensive operation: demonstration of a false direction for the main effort and composition of the strike formation; demonstration of false front reserves and deceiving the enemy concerning the direction for the use of the reserves of the front, armies, and sometimes even the Headquarters, Supreme High Command; the creation of false formations on secondary directions to attract new enemy forces and means to these directions; showing the enemy false formations emerging on his flanks and in his rear to supplement the main forces of the front (army) which are actually moving out to mislead him concerning the intentions and capabilities of our command and our troops at the decisive stages of the operation; the wide employment of false formations and demonstrations at night to deceive the enemy concerning our true intentions and the capabilities of our command with the onset of daybreak; the creation of a false situation on the external and internal fronts of encirclement to mislead the enemy concerning the inability of relieving the encircled troops, forcing them to surrender; the creation of dummy columns and formations which intensify the scale of pursuit of the routed enemy and also create in him the conviction that his main forces are being enveloped by our troops.

The list which has been presented shows how varied and how extensive was the area of operational camouflage and deception in the course of the war and to what extent it played a serious role in the operational support of an operation.

The experience of the war teaches us that to avoid stereotype and not turn camouflage and deception into its antithesis, it is necessary to reckon with the following factors: with the time necessary for the preparation of camouflage and deception measures; with the forces and means which can and must be detailed for the conduct of the deception maneuver; with the preparedness of the forces detailed for the conduct of measures in operational camouflage and deception and with the secrecy of their conduct; with the presence of previously prepared camouflage equipment or garnishing and special camouflage materiel; and finally, with the state of the enemy's information concerning the methods and forms of the deception maneuver which are employed by our troops.

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AIRCRAFT SERVICING PROCEDURES DESCRIBED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 5, May 77 signed to press
31 Mar 77 p 38

[Article by Engr-Maj G. Chechev: "Orienting on the Best"]

[Text] The raising of the quality and effectiveness and the search for an introduction of what is new are constantly at the center of attention of the personnel of our unit's aviation engineering service[IAS], which is completely proper: life moves forward combat equipment is improved and becomes more complex. And what was good yesterday now requires certain adjustments and a different approach. The leading aircraft specialists, in striving to maintain the airplanes in an exemplary condition, are working with perspective, are disclosing and generalizing the experience of the best little by little, and are conducting a search for hidden reserves.

Take the technological schedules as an example. It would appear that everything about them would have been well known to the IAS specialists long ago. Now it is difficult to find a squadron, not to mention a unit, where they would not be employed in the course of preparing the aircraft for flights or in the course of prescribed maintenance work. But the technological schedules have also undergone change with time, at times extremely substantial ones: in particular, they have become more compact and pithy. Some operations have lost their significance and they must be eliminated while others, on the contrary, must be expanded or replaced with new ones.

The working out and introduction of the technological schedule which completely meets today's requirements is not a simple matter. In our unit, schedules have been prepared for all types of preparation of aircraft equipment for flights and the content of the routing sheets for the specialists of the combined brigades have been reviewed. Then the check operations for the management personnel of the IAS were determined.

Having worked and introduced the new technological schedule and having accomplished other measures, the engineers did not become complacent. They prepared a list of check assignments for the aircraft technician. To help him (for a report to the commander of the crew) they carefully worked out an aid. The content of the cards for the conduct for radio traffic

between the pilot and the technician prior to takeoff on a mission was discussed and approved at the methodological council. In addition, they began to conduct demonstration preparation of an aircraft once a month in the leading squadron. A memorandum to the aircraft technician indicated the sequence for checking the equipment in the cockpit prior to closing the canopy.

Depending on the number of aircraft planned for flight, and also on the presence of personnel and means from the ATO [airfield technical support] the engineers also determine the time necessary for the preparation of the aircraft which is conducted in accordance with previously prepared plans from the technological schedule. For example, they envision the organization of objective inspections and drills, an analysis of the malfunctions which have been discovered, and a check of the completeness and quality of the work which has been accomplished. In addition, there is a paragraph which obliges the specialists to fill out the documents in good time and accurately. A check of the readiness of the IAS personnel to support the flights and the bringing to their attention the new instructions and orders on the operation of aircraft equipment which have arrived in the unit also found reflection in the plans.

The experience of servicing third-generation aircraft shows that the greatest difficulties are caused by the organization of preliminary preparation. It is known that the equipment in the cockpit is checked by many specialists. Therefore, the technological schedule is prepared in such a way that the personnel of two groups are occupied in one brigade.

Such a method has justified itself. If the specialists are well trained, have high technical knowledge, and are provided with all necessary means, then the times for the preparation for the aircraft for flights is reduced considerably and the quality of work increases.

In the squadron where the deputy commander for IAS is Major of Technical Service A. Dodulad, the quality of servicing of aircraft equipment is being improved step by step. It is not by chance that this squadron is leading in socialist competition in honor of the 60th anniversary of the Great October in many indicators.

The clear observance of the schedule and the high quality of preparation of aircraft equipment for flights also depend on providing the specialists with spare assemblies, tools, and KPA [checkout equipment]. This is why mobile laboratories have been created in each service group to reduce labor expenditures. They are equipped with checkout equipment, a variety of accessories, tools, and spare parts. There is also technical literature. Where necessary, the laboratory can be transported to the airplane. It permits the specialists to accomplish an entire complex of work--disassembly, replacement and assembly of units-- which increases the effectiveness of the specialists' labor considerably.

The operation of the storage batteries, it would appear, is a normal matter. But nevertheless storage batteries can cause considerable trouble if concern for them is considered to be minutia. It is known, let us say, that with minus temperatures of the outer air they must be removed from the airplane and sent to the charging station. Naturally, additional time is expended on this. Senior Lieutenant of Technical Service T. Gon and other officers and warrant officers [praporshchik] undertook to solve this problem. They set up a warming compartment in the technical shack with shelves for the storage of the storage batteries. As a result, a savings in time and means for transportation was achieved.

The practice of servicing contemporary aircraft confirms unambiguously: today the role of each IAS specialist is great in insuring the high combat-readiness of the aircraft equipment and its reliability. The significance of his ability, efficiency, and sense of personal responsibility for the assigned matter has increased.

It is not by chance our unit has begun to conduct unique check lessons on days for preliminary preparation. Their goal is to check the technical competence of the men. At the time established by the commander all specialists report to their classrooms. Here, in accordance with a previously worked out program with which the technicians and mechanics of each service were acquainted on the eve of the lesson, the engineer assigns each one one question which pertains to the specialist's forthcoming work: what he must accomplish on the airplane, what systems and assemblies must be inspected and checked once again prior to the start of flights, what tools and KPA should be employed in the course of the work.

At first, such questions concerned only the servicing of missile carriers during preflight preparation or in preparing them for repeated takeoff. But then the engineers expanded the program and made it more interesting and saturated. Now the specialist must not only provide an answer to a specific question but he must also tell briefly about the operation of the given system as a whole.

If the man was not able to answer the question which was placed before him precisely, the engineer, flight technician, or group chief conducts an additional lesson where what he did not understand is explained to him once again. Such a check, on which about an hour is spent, has become one of the effective forms for deepening the technical knowledge of the IAS personnel.

We have begun to devote more attention to an analysis of malfunctions which have been disclosed on the aircraft equipment and now the deputy squadron commanders for IAS and the flight technicians are conducting aircraft inspections more effectively.

The party and Komsomol organizations of the unit are not losing sight of the work of the IAS specialists. The party committee regularly hears the reports of the communist-supervisors of the aviation engineering service

concerning the introduction of advanced methods into the practice of servicing combat equipment, actively propagates the experience of the best specialists, and takes to task strictly those who live in the past and are not concerned about improving their technological knowledge.

It is now a busy time at our airfield--intense training is taking place on the ground and in the air. Responding to the call of the Central Committee of the CPSU to greet the 60th anniversary of the Great October Socialist Revolution in a worthy manner, the personnel of the IAS are applying every effort to accomplish their lofty obligations completely.

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TRAINING OF FLIGHT SERVICE PERSONNEL DESCRIBED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 5, May 77 signed to press
31 Mar 77 p 39

[Article by Engr-Lt Col A.Sanin: "The Engineer Arrived at the Methodological Classroom"]

[Text] All those who had the occasion to visit here have received many practical recommendations which are so necessary for the specialists of the aviation engineering service [IAS] for high-quality preparation of aviation equipment for flights as well as methodological advice on the training and education of subordinates.

The young engineers who arrive at the unit begin their service in the methodological classroom. For two weeks, the officers become acquainted with the history and traditions of the unit, with the special features in operating aviation equipment, and with the experience of the leaders in the socialist competition and talks are conducted with them. Even after the young officers join the formation and begin to work independently, they often come here for the advice of the experienced specialist, especially on the organization of aviation-engineering support of flights.

In this classroom, the engineer is able to prepare himself for lessons on drill, read the latest technical literature, and freshen his knowledge. Officers who are studying in correspondence courses at the higher educational institutions are rather frequent visitors.

The classroom attracts engineers and technicians with its well thought out external execution which has depth of content and by the high style in which displays, graphs, tables, circuits, and various working models are prepared. They graphically disclose the structure of the contemporary aviation engineering service and its missions, and the procedure for the conduct of preflight, preliminary, and postflight preparation of aircraft as well as the organization of park days is reflected. Here one can obtain information about all the types and varieties of fuel and lubricants which are employed

in aviation and can see examples of the technical documents which are maintained by the unit's IAS service. One can learn much about the organization of the aviation engineering support for flying shifts and during LTU [tactical flight exercises] and can become acquainted with the procedure for analyzing errors committed during the servicing of aviation equipment.

The basic material on the subjects is presented in methodological elaborations. There are more than forty of them. They are placed in special display card files. The procedures set forth the specific problems which are indicated in the literature on the subject briefly but with sufficient completeness.

When setting up the methodological classroom special attention was devoted to propagandizing leading experience in servicing airplanes, to the study of individual malfunctions, to increasing the effectiveness in technical training, and to the collection of other information which the young engineer needs. The classroom was equipped with inexpensive easily detachable plotting boards and not the slightest adornment or informational overload was employed. This provided the opportunity to renew the equipment quickly and keep up with the times: furthermore, neither special expenditures nor the distracting of a large number of people were necessary. All work was accomplished under the leadership of Engineer-Major E. Videnkin who headed the creative group of executors.

Before undertaking such an important matter, the officer attentively familiarized himself with the training-material base in the adjacent combat collectives. The engineer-major received many useful recommendations from officers A. Batalov, Yu. Kotkov, and others. It was especially important to consider that the new generation of airplanes had introduced important modifications in the content of classrooms and the instruction procedure and had put forth a number of problems in ensuring the intensification of the training process. This also forces commanders, their deputies for IAS, and other specialists constantly to be concerned about the creation of contemporary classrooms as well as about equipping them with full-fledged training aids.

The interests of the effectiveness and concreteness of training required the development of classroom equipment which is applicable to the equipment with which the unit is armed and the special features for its operation on the ground and in the air.

Experience shows that in our time we cannot count on successes in the mastery of new equipment and an increase in the skill of the IAS specialists if we do not introduce everything that is better and advanced into training. And the role of the methodological classroom is now especially great. It contains not only various recommendations which are necessary for the young engineer but it has also collected a wealth of material on the history of the development of our aviation during the 60 years of Soviet power. Assemblies of deputy commanders for IAS have taken place in the classroom in

an extremely interesting manner. The graduates of the higher engineering schools and academies who have arrived in our unit have received good practice.

These first successes, of course, are pleasing. But they oblige us even more for a further search and tireless concern for improvements in the methodological classroom. And the command, party organization, and specialists of the unit are undertaking everything so that the methodological classroom will meet contemporary requirements and so that it will help to propagandize leading experience and introduce it actively into the work of the technical-engineering personnel.

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NEED FOR CONTINUOUS TRAINING OF FLIGHT SERVICE OFFICERS STRESSED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 5, May 77 signed to press
31 Mar 77 p 40

[Article by Sr Lt Tech Serv V. Danichkin: "Is It Only a Shortage of Time?"]

[Text] My fellow servicemen and I read with interest the article by Engineer-Lieutenant Colonel M. Kashirskikh, "How Should the Flight Technician Be Trained?" In our opinion, the questions which were touched upon in it are very urgent. For now, not only has the role of the technical ability of the personnel grown considerably, but also their moral-political and psychological training. And, of course, in order to be in step with the times it is very important to study the equipment of the missile-carrying aircraft and service and operate it competently. The flight technician must possess broad erudition, constantly deepen his knowledge, and improve his skills. Furthermore, he must have a good understanding of the organization of the aviation-engineering support of flights and of problems in the training and education of subordinates. But where can he find the time for this? I know from my personal experience how difficult it is to find the time, especially for independent training, without which one cannot become a genuine specialist in our time.

Six years have already passed since I was appointed flight technician. Troubles increased immediately of course. If formerly I had to be responsible for one airplane, now I was responsible for four. Furthermore, it was necessary to teach and educate technicians and mechanics as well as supplement my knowledge myself. And a shortage of time became a far from abstract concept for me. For third generation aircraft equipped with more complex systems and assemblies require even greater attention than those which were mastered earlier. It is impossible for the flight technician to be satisfied with the knowledge obtained in the school alone: it is necessary to arm oneself actively with everything new, to master and introduce leading experience, and to constantly grow spiritually. It cannot be otherwise.

It is difficult to find any ready formulas and recommendations in this important matter. Unquestionably, the task of raising the professional level of the flight technicians is being solved in each unit and in each subunit and, in a number of cases, rather successfully. This is felt if only because we have now begun to devote more attention to this category of technical personnel. For example, prior to the start and in the middle of the training year training-methods assemblies are organized at which the officers become familiar with new documents and give lectures on socio-political and military-technical subjects. Lessons on psychology and, in particular, human engineering and on military pedagogy are especially useful. But, unfortunately, the number of such lessons conducted are fewer than should be. And you see, these subjects are acquiring ever more significance.

At the assemblies the commander, his deputy for IAS [engineer aviation service], and the best trained specialists of the services generalize their leading experience in the servicing of aviation equipment and try to inform the flight technicians about it. They tell about the achievements of the leaders in the socialist competition and analyze the special features of the fruitful soldierly labor.

Unquestionably, the assemblies provide very much for the officers. However, nothing can replace independent study in the improvement of knowledge and skill. Here, the possibilities are truly inexhaustible. But, as practice shows, the officer requires an exceptionally high state of organization, purposefulness, tremendous industriousness, and the ability to consider and plan his time for effective self-education.

It goes without saying, having returned to the airfield after strained flights when you really feel fatigued, it is not so simple to sit down and study. However, in spite of everything the leading officers find both the strength and the time for study. The commander often makes an example of Senior Lieutenant of Technical Service O. Zlobin for the others. And there is every basis for this. He is a first-class specialist, an innovator, and he possesses a high technical style. Communist Zlobin, coping with his service duties irreproachably, found the opportunity to take correspondence courses in the Air Force Engineering Academy imeni Professor N. Ye. Zhukovskiy for six years. Of course, it was not easy for the flight technician to combine study with strained service. However, he assigned a goal for himself, and he is achieving it. Now Zlobin is writing his graduation project. Another of our flight technicians, Engineer-Lieutenant I. Sverzhinskiy, has also completed his higher education.

Some may object that not all the flight technicians are studying in the academy. True. But the example of those who are studying shows that each one can find the time to deepen his knowledge, expand his horizon, and acquire the skills which correspond to contemporary requirements.

The people say: the whole is the sum of all its parts, just as the mighty rivers are made up of small streams. And knowledge does not come

to a person by itself but is acquired by constant strained labor and the ability to make effective use of time to expand one's political and technical horizon.

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DIVER PRACTICAL TRAINING DESCRIBED

Moscow SOVETSKIY VOIN in Russian No 10, May 77 signed to press 24 Apr 77 p 7

[Article by PO 1st Class V. Averin: "Seven Hundred Hours Beneath the Water"]

[Text] The polar night was coming to an end. For the personnel of the inshore-diver launch a routine day began with great concern. An urgent mission had been received to replace the propeller of one of the submarines. The launch, which looked like a pressing iron from afar, moved over the smooth surface of the gulf toward the pier where the ship stood.

The petty officer of the launch, it was he who supervised the drops, Senior Seaman Aleksandr Rak, had long ago distributed the duties among the divers. Seaman Mikhail Kuznetsov would be the first to go under the water. He is the working diver and he must remove the propeller. On the signal end-- Seaman Viktor Frolov, at the telephone and air-distributor panel-- Seaman Aleksandr Khomenko; it was he who was the insurance diver. Where necessary, Khomenko would go to Kuznetsov's assistance literally in minutes.

The depth at which the divers are working today is shallow. Therefore, Mikhail would go directly to the bottom from the ladder.

"Cold," Viktor Frolov huddles against the wind.

"No matter. I'll warm up under water," Kuznetsov jokes. "There the temperature is plus at any time of the year."

The divers have an unwritten law: before descent, each one checks his equipment himself first, and then the squad commander, and only then is he permitted to put on his suit.

The helmet makes Seaman Kuznetsov look something like a cosmonaut.

"Diver ready for descent!"

What is being done beneath the water cannot be seen but already after several minutes Kuznetsov reports clearly over the intercom:

"I am on the bottom. I feel good."

The necessary tools are lowered toward the propeller in a boatswain's chair from the side of the ship. A lantern beam breaks through the thickness of water and snatches out the propeller blades from the darkness.

The diver's work is obviously going well because he is whistling a tune. The loudspeaker reports it to Aleksandr Khomenko. He turns toward his comrades and raises his thumb: Everything is in order.

An uninitiated person, glancing at the divers' work from the side, would say that it is not so difficult--this diving business. But everything is far from as simple as it seems. Take for example the diving equipment. It weighs about one hundred kilograms. So the load of the divers is like the load of the cosmonauts. But even with truly Herculean equipment not everyone will be able to drop beneath the water. How strange it is but it pushes one to the surface. Here, the matter also has its secrets. And they undergo stubborn days of drills before the sea will open its secrets to the seaman.

The skill of the diver is determined by a special standard--the number of hours spent beneath the water. The petty officer of the launch, Senior Seaman Aleksandr Rak, has many--about seven-hundred. His fellow servicemen in the active group thus far have only two-hundred each.

Two-hundred hours all alone with the deep. Under stress when the successful accomplishment of a mission depends on your skill and coolness. By the way, the divers do not have to occupy themselves with skill. Senior Seaman Aleksandr Rak is a first-class specialist while Seamen Aleksandr Khomenko, Mikhail Kuznetsov, and Viktor Frolov are second-class specialists. In the year of the 60th anniversary of the Great October, the men have undertaken to raise their rating qualifications by one degree.

Not even an hour had passed when Kuznetsov reported that the task had been accomplished.

Climbing on board and removing his helmet, Kuznetsov reached into his pocket for matches by habit and suddenly froze. All at one stroke, as if on command, the seamen turned to the east to the place where the glance of the comrade was straining. From behind the cone-shaped hills the edge of the first sun after a long polar night showed itself, illuminated the cone-shaped hills which were sprinkled with snow with its meager rays, and slid across the water and across the tired faces of the seamen.

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SIGNIFICANCE OF MILITARY REGULATIONS DISCUSSED

Moscow AGITATOR ARMII I FLOTA in Russian No 10, May 77 signed to press 11 May 77 pp 15-17

[Article by Maj Gen Tank Trps A. Zyryanov: "The Wise Word of the Regulations"]

[Text] An important role in the attainment of unity of actions, clearness and coordination of the military organism, and the high combat readiness of the troops is played by the military regulations. They reflect the nature of our army as an army of the socialist state of workers and peasants. They embody the will of the Soviet people and the ideology and policy of the Communist Party on questions of military organizational development, the political, military, and legal upbringing of the servicemen, their training, and the strengthening of unity of command and military discipline.

The military regulations have absorbed the many-years' experience in the organizational development of the Armed Forces of the USSR and the richest achievements of Soviet military science. Organically combining political and military-patriotic propositions within themselves, they are a systematized summary of the basic rules for the behavior and activity of servicemen and the basis for their training and education.

Our regulations are the military wisdom and a genuine treasure of the knowledge which each serviceman requires and a summary of the laws for military life, the necessity for the following of which has been proven many times in the period of the severe feverish war years and in every day peaceful life.

The most expedient solution of many problems of military organizational development which are interconnected is formulated and consolidated with the aid of the regulations. Setting forth in a concise manner the requirements which are imposed on the servicemen, clearly defining their rights, responsibility, and duties, and regulating the interrelations between them the regulations disclose the essence of military duty and the ways for its worthy accomplishment.

The duties of the servicemen which follow from the missions of the Armed Forces and service conditions and which are consolidated the regulations are extremely

varied. They are set forth briefly and clearly. There is nothing superfluous or insignificant in the printed lines nor is there anything secondary or of an auxiliary nature. Everything that is of a primary nature and important is in them. Any requirement is filled with profound thought and content.

The main and pivotal idea of the military regulations is the idea of the men's personal responsibility for the defense of the socialist Fatherland, the idea of Soviet patriotism and boundless devotion to their military duty. The first article of the Interior Service Regulations says: "The serviceman of the Armed Forces of the USSR is the defender of his Motherland--the Union of Soviet Socialist Republics."

"The serviceman bears personal responsibility for the defense of his Motherland." This is the sacred duty of the serviceman and determines all his actions and his attitude toward service and combat training. As is known, it is also confirmed in the Constitution of the USSR where the defense of the Fatherland is considered as the sacred duty of each citizen of the USSR.

The idea of the defense of the Fatherland and the consciousness of the importance of military duty has always inspired and is inspiring the Soviet serviceman to mass heroism right up to self-sacrifice. Remembering their filial duty and the sacred nature of the military oath, thousands and thousands of brave defenders of the Motherland undertook immortal exploits.

Conscious military discipline and a high degree of organization are one of the decisive conditions for the victory of the Armed Forces in the years of the Great Patriotic War and their combat readiness in peacetime. Without discipline, there is no victory in battle and no successes in combat and political training during the training period. The Disciplinary Regulations state that military discipline is based on each serviceman's consciousness of his military duty and his personal responsibility for the defense of his Motherland--the Union of Soviet Socialist Republics. The serviceman's entire service is linked with the execution of orders. His behavior is everywhere subordinate to the execution of the oath, regulations, orders, and instructions of his chiefs. And whatever may be the order which has been issued by the commander, it is determined to one degree or another by the interests of defending the Motherland. This is why we say: the order of the commander is the order of the Motherland. This is why the Interior Service Regulations oblige the servicemen to obey their commanders (chiefs) implicitly and to protect them in battle.

The successful execution of military duty requires the constant improvement of military and political knowledge. This is what is written in the Interior Service Regulations: "The serviceman is required...constantly to improve his military and political knowledge; to know and protect the armament, combat, and other equipment entrusted to him to perfection...."

This requirement proceeds from the fact that the combat might of the Armed Forces depends to a great degree on the ideological conviction and combat-moral qualities of the Soviet men and on how well the personnel know their

weapons, combat and other equipment, and methods for their employment in difficult contemporary battle. The task for maintaining constant combat readiness of the troops requires that the soldier master his weapon skillfully and be able to accomplish not only his own functions but also the functions of his comrade in the squad, section, or crew. This is all the more important now since now crew-served weapons dominate in the subunits and units and this makes a special imprint on the actions of the men and requires from them exceptionally clear coordination and the readiness to replace a comrade or come to his assistance at any moment.

In those places where the military collective is more harmonious and more serious and where the principle of communist morals, "One for all and all for one," has become the norm, as a rule there are greater successes in combat and political training and socialist obligations are accomplished with high results. A sense of comradely solidarity and a high state of organization and discipline are present in such a collective and here the coordinated actions of the personnel are insured.

But military comradeship has nothing in common with mutual guarantees where, out of a sense of false friendship, some servicemen conceal individual cases of violations of military discipline from the commander. Mutual guarantees cause great harm and should be decisively eradicated:

It is the sacred duty of each serviceman to be a continuer of the combat traditions of the older generation of the Motherland's defenders and to multiply them. Responsibility for the honor and combat glory of the Armed Forces and for one's unit and his military rank is one of the serviceman's obligations set forth in the regulations.

These traditions live in the hearts of today's soldiers and seamen, sergeants, and petty officers. They summon them to good deeds and the high-quality accomplishment of the plans for combat and political training.

It is the common duty of all servicemen to display wise initiative and this duty is envisioned by the Interior Service Regulations. Initiative, resourcefulness, and sharpness are also required of the servicemen by the other regulations of the Armed Forces. In defining the main problems in the life and activity of the troops and in regulating the behavior of the servicemen under various conditions, at the same time they grant them broad opportunities to find new ways, means, methods, and procedures which permit them to accomplish their duties better and more rapidly or to accomplish the missions assigned by the commander. And this is completely understandable. For the regulations cannot provide exhaustive instructions on all questions without exception which arise in the life of the units and subunits.

We have dwelled only on some of the general duties of servicemen and the requirements which are imposed on them by our regulations. The serviceman who implements them must achieve high grades in training and service: as a rule, he will become an expert in combat and political training, rated

specialist, and rated sportsman. It is not by chance that a soldier's proverb says: live by the regulation and you will win honor and glory. Its validity has been confirmed by the entire history of the Soviet Armed Forces.

It is the primary duty of commanders, political officers, party and Komsomol activists and agitators to instill love for the regulations and to teach the men to employ the requirements of the regulations in their daily life and impose high demandingness in the accomplishment of the regulation's provisions.

The Soviet servicemen are now seized by a single aspiration--to learn and to serve so as to mark the 60th anniversary of the Great October Socialist Revolution with high grades in combat and political training. Knowledge and precise implementation of the regulations' requirements are a mandatory condition for the attainment of this goal.

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SUBMARINE CREW TRAINING ACTIVITIES

Moscow SOVETSKIY VOIN in Russian No 11, Jun 77 signed to press 13 May 77
p 8

[Article by PO 1st Cl A. Sannikov, secretary of the Komsomol organization aboard a submarine]

[Text] Along with its proud name "Ul'yanovskiy Komsomolets," our submarine also inherited the best traditions from older generations -- the desire to be always in the forefront, to fulfill combat training missions in a model fashion, to strengthen fleet friendship. The crew recently returned from a long cruise. We were confronted with many difficulties during our long cruise. We were aided in fulfilling all missions with an "excellent" rating, however, by high political keenness resulting from our preparation for the 60th anniversary of Great October, faultless fulfillment of pledges by each communist and Komsomol member, and good naval and special training.

Our boat's crew is an initiator of socialist competition in the twice Red Banner Baltic Fleet for a fitting reception for the 60th anniversary of the Great October socialist revolution. This for us is not only a great honor but is primarily a great responsibility. We pledged to elevate among our ranks 85 percent otlichniks in combat and political training, 80 percent second- and first-class specialists, and fulfill all combat training missions with excellent and good evaluations. The long cruise again showed that we can cope with these high pledges. Even young seamen somehow rapidly mature in a friendly cohesive collective.

...Two young seamen, twins Sergey and Aleksandr Birka, joined our ship. At the outset, of course, they lacked know-how and service skills but were distinguished by their endeavor and love for work, their desire to master to perfection the difficult profession of sonar operator. A year went by and both brothers became otlichniks in combat and political training and specialists first class. But, that is how it had to be. The excellent service of their senior comrades on the crew sets the example for them, as does their father, a participant in the Great Patriotic War who won many combat decorations. Communist Ivan Maksimovich Birka, seriously wounded in combat against the German fascist occupiers, is today also to be found where

the going is tough, where steadfastness and courage are required. He is a combine operator continuing the battle for the grain who has been awarded the Order of Lenin and the Order of the October Revolution.

And, when you add to a good example the concern of commanders and former sailors, then service will be easier and more interesting, people will turn to fulfillment of any mission more confidently and execute it with honor. That is how it was, not only with the twin brothers, but with other young sailors as well.

The great tradition of my co-workers is to become a specialist first class by the end of the first year of service aboard the submarine. This high level of classification has been attained by Viktor Khudovtsov, Vyacheslav Stekachov, Nikolay Fomchenko, and others. The first task in training and service is a healthy moral atmosphere in the collective. We live like one large family and the concerns and problems of one affect us all. And, as they say, what is good for one is good for all. The big things and the minor things.

We value and we enjoy happy and joyful people on a long cruise. For a submarine must be able to not only work hard but be able to rest well, too. Benevolence, sensitivity, skill and desire to value and understand the nature of a comrade, all these problems of the psychological compatibility among us were solved long ago. The collective and the personality are an integrated whole. And, we actively compete to more fully mold the crew into an integrated combat family, to see that each individual improves his moral-aesthetic qualities.

During a cruise, one subunit [podrazdeleniye] often gives a concert for the entire crew via the radio or in the wardroom. And honestly, it is not important who sings a bass rendition from Magomayev's repertoire, who reads his own rough but frank poetry -- the key is the desire itself, the attempt itself by a comrade to provide something interesting and serious.

One of these glorious people is Viktor Vasil'yevich Puzanov, a warrant officer [michman] and master of military affairs. He has developed dozens of highly-rated specialists during his 12 years of service.

But, I daresay that our party secretary, Captain Lieutenant-Engineer Anatoliy Mikhaylovich Strakhov, is the soul of the entire collective and exudes warmth to people. He possesses an amazing ability to inspire a person, to uplift a person in matters big and small.

The ship's communists always, as the saying goes, keep their fingers on the pulse of the most important tasks and events involving the crew and lead the way for the Komsomol members and for all the sailors in the crew.

I reminisced and related all of this about my comrades from the podium at the meeting of fleet competition initiators recently held at the Main Political Directorate of the Navy. In the name of the crew which sent me to

Moscow, I confidently assured the headquarters and all conference attendees that the submariners in "Ul'yanovskiy Komsomolets" will keep their word again -- will greet the 60th anniversary of Great October with excellent successes in combat training.

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READERS' QUESTIONS ON MILITARY SERVICE ANSWERED

Moscow SOVETSKIY VOIN in Russian No 11, Jun 77 signed to press 13 May 77
p 36

[Article: "The Soldier and the Law"]

[Text] Our readers often ask about military service and about benefits granted to first term soldiers and sailors. We answer these questions.

In accordance with the law "On Universal Military Service," youths who by the day of call-up have reached 18 years of age are drafted into active military service. They are accepted at military educational institutions from age 17.

The following periods of active military service have been established:

for soldiers and sergeants of the Soviet Army, naval shore units [chasti] and Naval Aviation, border, and internal troops -- 2 years;

for sailors and petty officers of ships, vessels, and combat security shore units of the Navy and naval units of the border troops -- 3 years;

for soldiers, sailors, sergeants, and petty officers of the Soviet Army, Navy, border, and internal troops who have a higher education -- 1 year.

Citizens are drafted into active military service twice a year (in May-June and in November-December). Periods of active military service are computed as follows.

The service period for those called up in the first half of the year is computed from 1 July of the call-up year, while that of individuals drafted in the second half of the year is computed from 1 January of the year following the call-up year.

During their period of service, soldiers and sailors acquire a military speciality, can reach sergeants' rank, and those who wish to devote themselves to military affairs and meet the applicable requirements can enter a military educational institution.

Soldiers, sailors, sergeants, and petty officers with a higher education and a favorable service record who have passed the established tests can receive the rank of reserve officer upon completion of their term of active service.

In connection with the call-up to active military service or entry into a military educational institution, the administration of institutions or enterprises must pay the draftee's salary, separation pay, and compensation for unused leave.

Specific benefits exist for first term servicemen. Upon entry into a military educational institution, those who completed secondary school or special educational institutions at the excellent level take one entrance examination from the number established for the corresponding specialty. If they receive an "excellent" evaluation, they bypass other entrance examinations. They must take the examinations for the remaining subjects if their results are "good" or "satisfactory."

Favorable conditions have been established for servicemen discharged into the reserves to obtain technical professions for work in agriculture. They are given priority for entry into schools concerned with mechanization of agriculture.

First term servicemen are exempt from payment of tax on all forms of monetary allowances, bonuses, and awards, as well as on bonuses and earnings received from enterprises and organizations at the place of work in certain cases.

A kolkhoz worker household having a family member on active duty is exempt from the agricultural tax if the wives or mothers of the servicemen, who have children up to 8 years of age, are the only ones capable of working. First term soldiers, sailors, sergeants, and petty officers receive free legal aid when petitioning for legal consultation for the purpose of compiling statements, complaints, and other legal documents which do not require resolution through court actions. Servicemen and the members of their families also received free legal assistance connected with benefits (housing, taxes, etc.) and with compilation of statements on assignment of pensions and grants.

First term soldiers, sailors, sergeants, and petty officers are granted leave: as an award, due to illness, and due to family circumstances.

A leave of up to 10 days duration given as an award during a term of active military service is granted once during the 2-year term of service. Sailors and petty officers serving 3 years may be granted such a leave twice.

Grants for the children of first term servicemen are assigned and paid dating from the day the father appears at the military commissariat for dispatch to a military unit. If the child is born after the father's call-up into the service, the grant for the child dates from its birthday.

Grants are established with the following scales. A grant for one child is 15 rubles per month and is 22 rubles per month for two or more children.

This applies to the children of servicemen who resided in cities, urban-type settlements, and in workers', and health resort settlements. An identical grant is given to inhabitants of rural locales who are not connected with agriculture. If the mothers of the children of servicemen reside in rural locales and are connected with agriculture, the grant for one child is 7 rubles 50 kopecks and is 12 rubles per month for two or more children.

Vouchers for assignment of grants to the children of persons called up for active military service are turned in within 1 week from the day the individual is entered on the personnel roster of his military unit.

Servicemen who have completed the term of active military service stipulated by law are discharged into the reserve. The day the individual receives documentation as to his discharge into the reserve from his unit is considered to be the day the active military service ended.

Early discharge into the reserve can result due to illness if the serviceman is certified as medically unfit for further service by a military medical commission or due to family circumstances if, during the period of service, the serviceman's family situation changed and he became eligible for deferment from the draft.

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ORIGINS OF SOCIALIST SYSTEM'S STRENGTH

Moscow KRASNAYA ZVEZDA in Russian 16 Jun 77 pp 2-3 LD

[Article by Maj Gen Prof V. Samoylenko, Dr of Philosophical Sciences:
"The Might Strength of Fraternal Unity"]

[Text] Approximately 3 decades have elapsed since the revolutionary process, initiated by the Great October Revolution, reached a qualitatively new stage: Socialism was transformed into a world system and the mighty socialist community took shape. The experience of these decades attests convincingly that one of the most important sources of the great successes of the socialist world in building a new life and in its historic confrontation with the world of capital, is the indestructible unity of the socialist countries. The CPSU and the other fraternal parties have always considered and do consider it their internationalist duty to tirelessly strengthen this unity. "The Soviet Union," the draft of the new USSR Constitution stresses, "as an integral part of the world system of socialism and of the socialist community, develops and strengthens friendship and cooperation and comradely mutual assistance with socialist countries on the basis of socialist internationalism and takes an active part in economic integration and in the international socialist division of labor.

I.

For formation of the socialist community of fraternal peoples--an international alliance of a new kind--was the logical consequence of the victory of socialist revolutions in a number of countries after World War II and of their defection from the capitalist system. A uniform [odnotipnyy] socialist system based on public ownership of the means of production and the authority of the working people headed by the working class, has become firmly established in those countries. The only scientific ideology, Marxist-Leninist ideology, has become the dominant ideology in those countries. Their peoples have set themselves the same great objective--to build socialism and communism. In other words, all the objective preconditions--socioeconomic, political and ideological--were on hand for the cohesion of the peoples of these countries into a united family.

The need for this cohesion was dictated by life itself and by the interests of establishing and developing the new social system and of the entire world revolutionary process. The socialist countries had to unite in order to withstand together the threat of imperialism and of the aggressive military blocs which it had created, and in order to defend and strengthen peace and international security and deal a resolute rebuff to any attempts to encroach upon the interests of socialism. On the other hand, they needed to unite in order to solve more rapidly and effectively the tasks of building a new society.

Of course, the possibility and necessity of the unification of the countries in which a socialist system had triumphed, does not mean that this process was of an automatic nature. Along the road toward unity, our countries had to, and have to, solve complex problems, overcome the difficult legacy of the capitalist past, and oppose the intrigues of imperialism which is seeking to introduce a split into our ranks. And, as Comrade L. I. Brezhnev stressed at the 25th CPSU Congress, "Much here, of course, depends on the policy of the ruling parties, and on their ability to safeguard unity, combat exclusiveness [zamknutnost] and national isolation, take common internationalist tasks into account and operate in concert for the sake of the solution of these tasks."

Internationalist solidarity has always been a powerful weapon of the international working class in its struggle for liberation, for the abolition of man's exploitation of man, and for the building of a new and classless society. In the hands of the working class of the countries that have already embarked on the path of socialist development, the strength of this weapon has increased many times over.

The practice of the building of socialism and communism has enriched the actual concept of proletarian internationalism and has imparted to it new features, new facets and new functions. It has become socialist internationalism--the ideology of all the working people of the socialist countries, the state policy of those countries and the cornerstone of their peoples' mutual relations. Its principles which determine the class essence of the new type of international relationships, has been enshrined in a number of bilateral and multilateral treaties and has thus assumed an international-legal nature.

Speaking of socialist internationalism as the basis of interstate and international relations, it is important to stress first of all that it not only does not deny such general democratic principles as equality, respect for independence and sovereignty and noninterference in each other's internal affairs, but, in essence, for the first time in history insures their really full and really profound and comprehensive practical embodiment. And this imparts special strength to the voluntary alliance of our countries and peoples and to their friendship and unity.

Socialist internationalism is manifested, secondly in the comradely solidarity, fraternal support and mutual assistance which embrace all the processes of social development and all spheres of the building of socialism and communism and the defense of these. This cooperation creates the best opportunities for the solution of national-state tasks and at the same time enables each of the socialist countries to do the maximum possible for the strengthening of the entire community and for the growth of its might and influence on the course of world events.

Thirdly, a mechanism of cooperation among the fraternal countries has developed and is functioning successfully in line with the principles of socialist internationalism and forms of their cooperation have been shaped and are developing steadily. The activity of the political consultative committee--the highest organ of the Warsaw Pact Organization--is of tremendous significance. Many of the initiatives it has launched in recent years have formed the basis of the decisions of major international forums or have been reflected in a number of important bilateral interstate acts. Meetings of the leaders of fraternal parties and of the countries of the socialist community are held regularly at which exchanges of experience take place and a common approach to the solution of the vital tasks confronting our parties and countries is drawn up. The mechanism of the military organization of the Warsaw Pact is functioning successfully.

The activity of the apparatus of the economic, scientific and technical cooperation of the countries of the socialist community in the form of CEMA and its organs, is of important significance. In practice all the elements of the party, state and economic organisms and, also, a very broad network of public organizations of the socialist countries are involved in active all-embracing work on the development of cooperation. These deep and diverse contacts and links which express the international cohesion of the fraternal peoples, augment our common strength and promote successful movement forward.

II.

The internationalist policy of the fraternal parties which is aimed at strengthening the unity and cohesion of the socialist countries, has already yielded, and continues to yield, remarkable results.

It is necessary to note above all that thanks to this policy, to the heroic creative labor of the fraternal peoples and to their comradely mutual assistance, the economic might of the socialist community has increased considerably. Whereas in 1950 the CEMA member countries turned out only two-thirds as much industrial production as the countries which now make up the common market, the CEMA countries now produce more than twice as much as these capitalist states. And, in all, the CEMA countries now account for about one-third of world industrial production.

Particularly great successes in economic building have been achieved by the CEMA countries in the last five-year plan period. In those countries,

industrial production increased, in all, over that time by 47 percent. There were approximately similar indicators in the preceding two five-year plan periods. However, the actual magnitude of each percentage point of the volume of production has now increased considerably. In 1975 it was almost 2.2 times greater than in 1965 and over 10 times greater than in 1950. Our countries are also successfully solving the economic tasks of the present five-year period. The implementation of the long-term comprehensive program for socialist economic integration adopted in 1971 by the CEMA countries has played a tremendous role in the achievement of these successes. In accordance with this program, our countries have progressed considerably in production specialization and cooperation and have considerably expanded the joint construction of major industrial complexes designed to satisfy the needs of all the participants in the construction work. The following pact, for instance, attests to the scale of this work. The estimated cost of the installations being built by joint efforts in the fuel and raw-material sectors alone amounts to R9 billion.

A major new step forward is currently being taken along the path of the deepening of socialist economic integration. The CEMA countries are jointly devising long-term targeted programs for cooperation in the fuel, power and raw-material sectors, in machine building, in the production of the basic forms of food and industrial consumer goods and in the development of transport communications. The fulfillment of these programs will make it possible to raise the economic potential of our countries and of the socialist community as a whole even more, and to speed the historic process of the rapprochement and evening out of the levels of economic development of the fraternal countries.

All these achievements have, as their main consequence, the steady change in the correlation of forces in the world economy in favor of socialism. And this, in its turn, leads to the further change of the correlation of forces in socialism's favor in world politics, too. The very birth of the socialist system deprived capitalism of its dominant position in the world arena, and limited its opportunities to dictate its will to the peoples. The growth of the socialist countries' might, the strengthening of their unity and cohesion, and the intensification of the influence of the principled Leninist policy which they are pursuing in international affairs has caused an even greater harrowing of capitalism's opportunities. The socialist community has now become the leading factor in world politics.

If recent years alone are borne in mind, then thanks to unity, solidarity and mutual support, the fraternal countries have succeeded in solving a number of major tasks. They include, above all, the great victory of the Vietnamese people whose heroism and selflessness, combined with the decisive support for them by the socialist countries and progressive public of the entire world, proved stronger than the armies of the imperialist intervention and of the internal reaction. They include the winning of freedom by the peoples of Laos and Cambodia (now Kampuchea). They include

the general recognition of the sovereignty of the GDR and its admission to the United Nations, the confirmation on an international scale of the inviolability of the Western borders of the GDR, Poland and Czechoslovakia and the strengthening of the international positions and authority of socialist Cuba.

In fulfilling their internationalist duty, the fraternal socialist countries have given, and continue to give, assistance to the states which have freed themselves from colonial oppression and which are defending in the confrontation with imperialism their political and economic rights and are seeking full, national independence and the enhancement of the level of social, economic and cultural development of their peoples. The example of the people of Angola who managed to uphold their independence in the armed struggle against the imperialist interventionists, and to set about peaceful construction, shows convincingly that under contemporary conditions no one can break the aspiration of the peoples for freedom.

The unity of the socialist countries, their increased might, and their energetic and purposeful foreign political activity have also played a decisive part in the improvement of the international situation. The relaxation of international tension has become a reality. Of course, detente still has many opponents. Aggressive imperialist forces are attempting in every way to hinder it and are continuing the arms race, and whipping up anticommunist hysteria. The fraternal countries are resolutely rebuffing the intrigues of the enemies of peace and socialism and are struggling persistently for the prevention of aggressive wars and for the consistent implementation of the principle of peaceful coexistence among states with different social systems. This principled foreign political course received fresh confirmation in the draft of the USSR Constitution in which it is emphasized that "The Soviet state consistently pursues a Leninist policy of peace and advocates the strengthening of the security of the peoples and broad international cooperation."

The unity and cooperation of the fraternal socialist countries has also been marked by great successes in the ideological sphere, in the enrichment of the spiritual life of our peoples and in the enhancement of their moral potential. Above all, it is necessary to note the fraternal parties' joint contribution to the further development of Marxist-Leninist theory. A vivid example of this is the elaboration of the concept of the developed socialist society. Speaking at the CPSU Central Committee May (1977) Plenum, Comrade L. I. Brezhnev observed that when preparing the draft of the new USSR Constitution, we used the experience of the constitutional development of the fraternal socialist countries. The successes in the development of many scientific disciplines is the result of the collective efforts of our countries' scientists. Our cooperation in public education and enlightenment, culture and art and in the press, radio and television, is yielding salutary results. All this is promoting a raising of the standard of the ideological-educational work of the fraternal parties and the attainment of new successes in the ideological-confrontation with capitalism.

The spiritual atmosphere in the fraternal countries of socialism is characterized by the close cohesion of the peoples of these countries around the communist and workers parties, the active struggle of millions for the building of socialism and communism in their countries and their fervent concern for the successes of the entire socialist community. The patriotic and internationalist feelings of our peoples are being manifested with particular force just now in the period of preparation for the 60th anniversary of the Great October Revolution. The initiative of the collective of the "Red Gospel" from People's Hungary and of the workers of other socialist countries who have launched competition in honor of the jubilee of the October Revolution, pledging to fulfill export deliveries to the USSR ahead of schedule, attests eloquently to this.

III.

Speaking of the great strength of the unity of the fraternal peoples, its significance for the strengthening of the defensive capability of the socialist countries and of the socialist community as a whole ought particularly to be emphasized. The need for the joint defense of the revolutionary gains of the peoples who have embarked on the path of socialism is an objective law-governed pattern of the formation and development of the new world. A close military and economic alliance, V. I. Lenin pointed out, is an obligatory necessity, otherwise the capitalists "will crush and stifle us one by one" (Complete Collected Works, Vol 40, p 46) any attempts to disrupt this alliance were described by Lenin as a completely inadmissible phenomenon and as a betrayal of the interests of the struggle against imperialism.

These Leninist propositions are topical under contemporary conditions, too. Although the positions of world imperialism have been substantially weakened, its aggressive nature has not altered. Reactionary imperialist forces even today have not abandoned their attempts to frustrate the cause of revolutionary transformations in the socialist countries, and to return them to the capitalist road. This is why a resolute rebuff to these attempts, the reliable defense of the socialist gains and the pooling of efforts for the sake of this noble goal are regarded by the fraternal parties as their internationalist duty.

The draft of the new USSR Constitution attests to the significance which the CPSU attaches to this question, for instance, a special chapter is devoted in the draft to the defense of the socialist fatherland. The draft emphasizes that the defense of the socialist fatherland is the most important function of the state and the cause of all the people and that the duty of the USSR armed forces to the people is to reliably defend the socialist fatherland and to be constantly in a state of combat readiness which will guarantee an immediate rebuff to any aggressor.

An important step along the road of rallying together the fraternal countries in the interests of the reliable defense of their revolutionary gains was

the conclusion of the Warsaw Pact in 1955 and the creation within its framework of a military organization of socialist countries--the joint armed forces. This purely defensive treaty was a measure in retaliation to the creation of the aggressive NATO Bloc which is directed against the Soviet Union and the other countries, life itself has confirmed the correctness and fruitfulness of this measure.

"The joint efforts of the Warsaw Pact countries," Comrade L. I. Brezhnev observed, "have created such a defense potential that any attempt by imperialism to make short work of socialism by military force is doomed to crushing failure in advance." It is this defensive might of the socialist countries and their close unity and cooperation in questions of the defense of socialism that have made the Warsaw Pact Organization a mighty obstacle in the path of imperialist aggressors.

The military cooperation of the fraternal countries is multifaceted. It includes the coordination of defense measures, and plans for the building and development of national armies and for enhancing their defensive capability and combat readiness. It presupposes mutual assistance in the technical equipping of the armies and naval forces, in the assimilation and use of new armaments and combat equipment and in the training of military and military-scientific cadres. It means the pooling of effort in the development of military theory and in the drawing up and introduction into practice of the general principles of the training and education of the personnel.

An important form of the combat cooperation of the allied armies consists of joint exercises held in accordance with the plans of the joint command. They help to achieve a unity of views on questions of military art and they promote the improvement of the organization of cooperation and control of the allied forces and the enhancement of the skill of commanders and staffs and of the combat skill of the entire personnel. At the same time, these exercises are a good school for the internationalist training of the servicemen.

Operational and tactical gatherings, conferences of leading military men, including political workers, military-scientific conferences and the exchange of military delegations are good for the mutual exchange of experience of training and educational work accumulated in the allied armies. Broad contacts and links among the military scientists of our countries, workers of the military press, artistic personalities and sportsmen are of great significance.

The close military cooperation of the Warsaw Pact states has already made a worthy contribution to the strengthening of the defensive might of the socialist community. It will continue to develop and be improved. "We," the CPSU Central Committee report to the 25th party congress stressed, "are resolute opponents both of the division of the world into opposed military blocs and also of the arms race. Our position on this score is

well known. However, it is necessary to declare most clearly that as long as the NATO Bloc is preserved and as long as militaristic circles conduct an arms race, our country, together with the other members of the Warsaw Pact, will strengthen this military-political alliance."

The peoples of the fraternal countries treasure their unity, friendship and cooperation. "The strengthening of the cohesion of the socialist countries and the deepening of fraternal friendship among their Marxist-Leninist parties," the CPSU Central Committee resolution "on the 60th anniversary of the Great October Socialist Revolution" stresses, "are considerably increasing the united strength of socialism and its influence upon the course of international events." There is no doubt that the strength of our unity will continue to grow.

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END